

Medieval Armour

A Wikipedia Compilation

by

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Chapter 1

Components of medieval armour

This table identifies various pieces of armour worn from the medieval to **Early Modern period** in the West, mostly plate but some mail, arranged by the part of body that is protected and roughly by date. No attempt has been made to identify fastening components or various appendages such as lancerests or plumeholders or clothing such as **tabards** or **surcoats** which were often worn over a harness.

There are a variety of alternative names and spellings (such as cowter/couter or bassinet/bascinet/basinet or besagew/besague) which often reflect a word introduced from the French. Generally, the English spelling has been preferred (including *mail* instead of the lately used *maille* or the inauthentic term *chainmail*).

1.1 Japanese analogues

The following components of **Japanese armour** roughly match the position and function of certain components of occidental armour:

- **Kusari zuki** (mail coif)
- **Mengu** (mask)
- **Kabuto** (helmet)
- **Do** (armour) (cuirass)
- **Kote** (vambrace & lower pauldron)
- **Han kote** (Gauntlet)
- **sode** (roughly pauldron)
- **Suneate** (greave)
- **Kusazuri** (fauld or tasset)
- **Wakibiki** (bezagews)
- **Nodowa** (gorget)
- **Kusari katabira** (Hauberk)
- **Kikko katabira** (Brigandine)
- **Kôgake** (Sabaton)
- **Kusari shikoro** (Aventail)



A full suit of Italian plate armour circa 1450

Chapter 2

Great helm

The **great helm** or **heaume**, also called **pot helm**, **bucket helm** and **barrel helm**, is a helmet of the **High Middle Ages** which arose in the late twelfth century in the context of the **Crusades** and remained in use until the fourteenth century. They were used by knights and heavy infantry in most European armies between about 1220 to 1540 AD.

2.1 History

In its simplest form, the great helm was a flat-topped cylinder of steel that completely covered the head and had only very small openings for the eyes and mouth. Later designs gained more of a curved design, particularly on the top, to deflect or lessen the impact of blows.

The great helm ultimately evolved from the **nasal helmet**, which had been produced in a flat-topped variant with a square profile by about 1180.^[1] From this type of helmet an intermediate type, called an '**enclosed helmet**' or 'primitive great helm', developed near the end of the 12th century. In this helmet the expansion of the nasal produced a full face-plate, pierced for sight and breathing. This helmet was largely superseded by the true great helm by c. 1240.^[2]

A later variant with a more conical top is known as a 'sugarloaf helm'. In Spanish they are called *yelmo de Zaragoza*, referring to *Zaragoza* where they were introduced for the first time in the Iberian peninsula.^[3]

Although the great helm offered vastly superior protection than previous helmets, such as the **nasal helm** and **spangenhelm**, it limited the wearer's peripheral vision, and in addition to being heavy, the mass-produced form (flat-topped without ventilation holes) provided little ventilation and could quickly overheat in hot weather. Knights usually wore the great helm over a mail **coif** (hood) sometimes in conjunction with a close-fitting iron skull cap known as a **cervelliere**. The later development of the cervelliere, the **bascinet**, was also worn beneath the great helm; men-at-arms would often remove the great helm after the first clash of lances, for greater vision and freedom of movement in melee combat. The bascinet had a mail curtain attached, a **camail** or aventail, which superseded the coif. Mail throat and neck defences such as these were made obsolete when plate **gorgets** were introduced, around 1400.

The **bascinet** evolved from its early skull cap form to supersede the great helm for combat. The great helm fell into disuse during the 15th century; however it was used commonly in tournaments where a version of the great helm, the **frog-mouthed tilting helm**, evolved.^[4]

2.2 Decoration

The Great Helm was often blackened, lacquered or painted, and frequently bore decorations such as:

- Ventilation decoration (crosses and symbols)
- Visor (horizontal and vertical “cross”) decorations
- Crests, such as crowns, feathers, metal wings (found on helmets belonging to Teutonic Knights).



13th century German great helm with a flat top to the skull.



Great helms were worn with cloth and fiber padding on the inside, here shown removed from the helmet.

2.3 Contemporary reenactors

The great helm is today especially popular amongst **live-action role players** and in medieval re-enactment such as the **Society for Creative Anachronism**. It is inexpensive, easy to manufacture with even rudimentary equipment (metal scissors, drill, rudimentary anvil, rivets and hammer), and provides good protection for the head against both sharp and blunt weapons. Its biggest drawbacks are poor ventilation and air circulation, especially if worn with closed-cell foam padding, making it very hot in warm weather.

Modern reenactment versions of great helms weigh 1.5 to 3 kg. For safety reasons, they are made from thicker steel than medieval originals but are not overly heavy, cumbersome, or uncomfortable. Although visor slits are usually only

some 20–30 mm wide, they do not greatly restrict the field of vision as they are very close to the wearer's eyes.^[5]

2.4 Notes and references

- [1] Gravett, p. 17
- [2] Gravett, Plate D and p. 54
- [3] David Nicolle, *Medieval Warfare Sourcebook* vol I
- [4] http://www.myarmoury.com/feature_spot_ghelm.html
- [5] Source Noticeboard in *Stafford Castle* medieval armoury.

2.5 References

- Gravett, Christopher (1993) *Norman Knight 950-1204 AD*, Osprey, London.

2.6 External links

- “Surviving examples, and illustrations”. Archived from the original on 2011-04-01.
- The Field of a Shield and the Heraldic Tinctures a discussion of heraldry and great helm crests
- Arador Armour Library design and construction techniques for replica great helms
- Medieval Helm Crests design and construction techniques for helm crests
- Construction guide for a historical combat re-enactment great helm



Chapter 3

Cervelliere



Cervelliere c. 1240/1250.

cervelliere (cervellière, cervelliera;^[1] Latin: *cervellerium*,^[2] *cerebrarium*,^[3] *cerebrerium*, *cerebotarium*^[4]) is a hemispherical, close-fitting^[5] **skull cap** of steel or iron.^[3] It was worn as a helmet during the medieval period.

3.1 History

The Cervelliere was first introduced during the late 12th century and was the primary head protection for Crusaders at that time. It was worn either alone or more often over or under a **mail coif**.^[5] Additionally, a **great helm** could be worn over a cervelliere,^[5] and by the late 13th century this would be the usual practice.

Over time, the Cervelliere experienced several evolutions. Many helmets become increasingly pointed and the back of the skull cap elongated to cover the neck, thus evolving into the **bascinet**.^[6] Cerveillieres were worn throughout the medieval period and even during the Renaissance.^[7] Cheap and easy to produce, they were much used by commoners and non-professional soldiers who could not afford more advanced protection.

Anecdotaly, contemporary medieval literature credit the invention of the cervellière to astrologer **Michael Scot** ca. 1233,^[1] though not seriously entertained by most historians.^[1] The *Chronicon Nonantulanum*^[note 1] records that the astrologer devised the iron-plate cap shortly before his own predicted death, which he still inevitably met when a stone weighing two ounces fell on his protected head^{[2][3]}

3.2 Notes

[1] Planché gives *Nantubanum* but *Nonantulanum* is given by Du Cange

3.3 References

- [1] Muendel 2002
- [2] Du Cange 1842, p. 295
- [3] Planché 1896, p. 88, volume 2
- [4] Planché, loc. cit., citing *Chronicon Francisci Pepina*, lib. ii. cap. 50
- [5] Nicolle & 1996 p-51
- [6] Petersen 1968 (*Encyclopaedia Britannica*, “Helmet”)
- [7] Douglas Miller, *Armies of the German Peasants' War 1524-26* (Oxford: Osprey Publishing, 2003), 47.
- Fairholt, Frederick William (1896). *Costume in England: a history of dress to the end of the eighteenth century* 2 (4th ed.). London: George Bell and sons.
- Muendel, John (2002). “The Manufacture of the Skullcap (*Cervelliera*) in the Florentine Countryside during the Age of Dante and the Problem of Identifying Michael Scot as its Inventor” (Jstor). *Early Science and Medicine* 7 (2): 93–120. doi:10.1163/157338202x00045.
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- Planché, James Robinson (1896). *A cyclopaedia of costume or dictionary of dress* 2 (4th ed.). London: George Bell and sons.
- Du Cange, Charles Du Fresne (1842). *Glossarium mediae et infimae Latinitatis* 2. Paris: Firmin Didot. p. 295.

3.4 External links

- <http://www.charlesfleming-sca.com/military/cervelliere.htm>

Chapter 4

Bascinet

“Basinet” redirects here. For the infant’s bed, see [bassinet](#).

The **bascinet** — also **bassinet**, **basinet**, or **bazineto** — was a Medieval European open-faced military helmet. It evolved from a type of iron or steel [skullcap](#), but had a more pointed apex to the skull, and it extended downwards at the rear and sides to afford protection for the neck. A mail curtain ("[camail](#)" or [aventail](#)) was usually attached to the lower edge of the helmet to protect the throat, neck and shoulders. A [visor](#) (face guard) was often employed from ca. 1330 to protect the exposed face. Early in the fifteenth century, the camail began to be replaced by a plate metal gorget, giving rise to the so-called “great bascinet”.

4.1 Development

The first recorded reference to a bascinet, or *bazineto*, was in the Italian city of [Padua](#) in 1281, when it is described as being worn by [infantry](#).^[1]

It is believed that the bascinet evolved from a simple iron skullcap,^[2] known as the [cervelliere](#), which was worn with a [mail coif](#), as either the sole form of head protection or beneath a [great helm](#). The bascinet is differentiated from the cervelliere by having a higher, pointed skull.^[2] By about 1330 the bascinet had been extended lower down the sides and back of the head. Within the next 20 years it had extended to the base of the neck and covered the cheeks.^[3] The bascinet appeared quite suddenly in the later 13th century and some authorities see it as being influenced by [Byzantine](#) or [Middle-Eastern Muslim](#) helmets.^[1] The bascinet, without a visor, continued to be worn underneath larger "[great helms](#)" (also termed *heaumes*).^{[4][5][6]}

4.1.1 Camails or aventails

Unlike the cervelliere, which was worn in conjunction with, often underneath, a complete hood of mail called the coif,^[7] early bascinets were typically worn with a neck and throat defence of mail that was attached to the lower edge of the helmet itself; this mail 'curtain' was called a camail or [aventail](#). The earliest camails were riveted directly to the edge of the helmet, however, beginning in the 1320s a detachable version replaced this type.^[8] The detachable aventail was attached to a leather band, which was in turn attached to the lower border of the bascinet by a series of staples called [vervelles](#). Holes in the leather band were passed over the vervelles, and a waxed cord was passed through the holes in the vervelles to secure it.^[9]

4.1.2 Protection for the face

Bretache

The illustration to the right shows a bascinet with a type of detachable nasal (nose protector) called the bretache or *bretèche* made of sheet metal.^[10] The bretache was attached to the aventail at the chin, and it fastened to a hook or clamp on the brow of the helmet.^[10] According to Boeheim, this type of defence was prevalent in Germany, appearing around 1330 and fading from use around 1370.^{[10][note 1]} The bretache was also used in Italy; one of the first representations of it is on the equestrian statue of [Cangrande I della Scala](#), who died in 1329. It is also shown

on the tomb of Bernardino dei Barbanzoni in the Museo Lapidario Estense in Modena, executed ca. 1345–50. An advantage of the bretache was that it could be worn under a great helm, but afforded some facial protection when the great helm was taken off. Use of the bretache preceded and overlapped with that of a new type of visor used with the bascinet, the “klappvisor” or “*klappvisier*”.^[11]

Visored bascinets

The open-faced bascinet, even with the mail aventail, still left the exposed face vulnerable.^[13] However, from about 1330, the bascinet was often worn with a ‘face guard’ or movable visor.^[8]

The “klappvisor” or “*klappvisier*” was a type of visor employed on bascinets from around 1330-1340; this type of visor was hinged at a single point in the centre of the brow of the helmet skull. It was particularly favoured in Germany, but was also used in northern Italy where it is shown in a Crucifixion painted in the chapter hall of Santa Maria Novella in Florence, c.1367. Its use in Italy seems to have ceased around 1380, but continued in Germany into the 15th century.^[14] The klappvisor has been characterised as being intermediate between the bretache nasal and the side pivoting visor.^[15] It should be noted that not all sources agree on the nature of the *klappvisier*; De Vries and Smith class all smaller visors, those that only cover the area of the face left exposed by the aventail, as *klappvisiers*, regardless of the construction of their hinge mechanism. However, they agree that *klappvisiers*, by their alternate definition of ‘being of small size’, preceded the larger forms of visor, which exclusively employed the double pivot, found in the latter part of the 14th century.^[16]

The side-pivot mount, which used two pivots - one on each side of the helmet, is shown in funerary monuments and other pictorial or sculptural sources of the 1340s. One of the early depictions of a doubly pivoted visor on a bascinet is the funerary monument of Sir Hugh Hastings (d. 1347) in St. Mary’s Church, Elsing, Norfolk, England.^[3] The pivots were connected to the visor by means of hinges to compensate for any lack of parallelism between the pivots. The hinges usually had a removable pin holding them together, this allowed the visor to be completely detached from the helmet, if desired.^[8] The side-pivot system was commonly seen in Italian armours.^[16]

Whether of the klappvisor or double pivot type, the visors of the first half of the 14th century tended to be of a relatively flat profile with little projection from the face.^[8] They had eye-slits surrounded by a flange to help deflect weapon points. From around 1380 the visor, by this time considerably larger than earlier forms, was drawn out into a conical point like a muzzle or a beak, and was given the names “hounskull” (from the German *hundsgugel* - “hound’s hood”) or “pig faced”^[2] (in modern parlance).^[8] From about 1410 the visor became progressively more rounded, and by 1435 it gave an ‘ape-like’ profile to the helmet; by 1450 it formed a sector in the, by then, almost globular bascinet.^[17]

4.2 Later evolution of the helmet

Between c. 1390 and 1410 the bascinet had an exaggeratedly tall skull with an acutely pointed profile — sometimes so severe as to have a near-vertical back. Ten years later both the skull of the helmet and the hinged visor started to become less angular and more rounded. Almost globular forms became common by c. 1450. As part of the same process the helmet became more close-fitting, and narrowed to follow the contours of the neck.^[18]

4.2.1 Bevors and gorgets

Around 1350, during the reign of John II, French bascinets began to be fitted with a hinged chin- or jaw-piece (bevor (sense 2), French: *bavière*), upon which the visor would be able to rest.^[19] The visor and bevor that closed flush with each other thus provided better protection against incoming sword blows. This type of defence augmented the camail rather than replaced it.^[19]

The bascinet fitted with a camail was relatively heavy and most of the weight was supported directly by the head. Plate gorgets were introduced from c. 1400-1410, which replaced the camail and removed the weight of the throat and neck defences from the head to the shoulders. At the same time a plate covering the cheeks and lower face was introduced also called the *bavière* (contemporary usage was not precise). This *bavière* was directly attached by rivets to the skull of the bascinet. The combined skull and *bavière* could rotate within the upper part of the gorget, which overlapped them. A degree of freedom of movement was retained, but was probably less than had been the case with the mail camail.^[20]

4.2.2 Great bascinet

In the view of Oakeshott the replacement of the camail by a plate gorget gave rise to the form of helmet known as the “great bascinet”.^[17] However, many other scholars consider that the term should be reserved for bascinets where the skull, and bavere - if present, was fixed to the gorget, rendering the whole helmet immobile.^{[21][22]}

Early gorgets were wide, copying the shape of the earlier aventail, however, with the narrowing of the neck opening the gorget plates had to be hinged to allow the helmet to be put on. Early great bascinets had the skull of the helmet riveted to the rear gorget plate, however, some later great bascinets had the skull forged in a single piece with the rear gorget plate. The gorget was often strapped to both the breast and backplate of the cuirass.^[17] In this late form the head was relieved of the entire weight of the helmet, which rested on the shoulders; however, the helmet was rendered totally immobile and the head of the wearer had only limited abilities to move inside it. Though very strongly constructed, this type of helmet imposed limitations on the wearer’s vision and agility.^[21]

4.3 Historic use

4.3.1 Use with the great helm

Bascinet, other than great bascinets, could be worn beneath a **great helm**. However, only those without face protection, or those with the close fitting bretache, could be worn in this manner. The great helm afforded a high degree of protection, but at the cost of very restricted vision and agility. The lighter types of bascinet gave less protection but allowed greater freedom of movement and better vision. The practicality of a man-at-arms being able to take off a great helm during a battle, if he wanted to continue fighting wearing just a bascinet, is unclear. By the mid 14th century the great helm was probably largely relegated to tournament use.^[23] However, **Henry V of England** is reputed to have worn a great helm over a bascinet at the **Battle of Agincourt** in 1415. He was recorded as receiving a blow to the head during the battle, which damaged his helmet; the double protection afforded by wearing two helmets may have saved his life.^[24]

4.3.2 Later use

By the middle of the 14th century, most **knights** had discarded the great helm altogether in favor of a fully visored bascinet. The bascinet, both with and without a visor, was the most common helmet worn in Europe during most of the 14th century and the first half of the 15th century, including during the **Hundred Years’ War**. Contemporary illustrations show a majority of **knights** and **men-at-arms** wearing one of a few variants of the bascinet helmet. Indeed so ubiquitous was the use of the helmet that “bascinet” became an alternative term for a man-at-arms.^[24] Though primarily associated with use by the ‘knightly’ classes and other men-at-arms some infantry also made use of the lighter versions of this helmet. Regions where rich citizens were fielded as infantry, such as Italy, and other lands producing specialised professional infantry such as the English and Welsh **longbowman** probably saw the greatest use of bascinets by infantrymen.^{[25][26]}

The basic design of the earlier, conical version of the helmet was intended to direct blows from **weapons** downward and away from the skull and face of the wearer. Later versions of the bascinet, especially the great bascinet, were designed to maximise coverage and therefore protection. In achieving this they sacrificed the mobility and comfort of the wearer; thus, ironically, returning to the situation that the wearers of the cumbersome great helm experienced and that the early bascinets were designed to overcome.^[27] It is thought that poorer **men-at-arms** continued to employ lighter bascinets with mail camails long after the richest had adopted plate gorgets.^[28]

4.3.3 Decline in use

Soon after 1450 the “great bascinet” was rapidly discarded for field use, being replaced by the **armet** and **sallet**, which were lighter helmets allowing greater freedom of movement for the wearer. However, a version of the great bascinet, usually with a cage-like visor, remained in use for foot combat in tournaments into the 16th century.^[17]

4.4 Notes

- [1] The illustration, taken from Viollet-le-Duc, occurs under the heading of “Barbute” (Viollet-le-Duc 1874, volume 5, p.187) and not “Bacinet”. Viollet-le-Duc refers to the nose piece merely as a “*nasal*”. However, Nicolle defines the barbute, or *barbute*, as a “deep form of **bascinet** protecting much of the face” Nicolle (1996), p. 62.

4.5 References

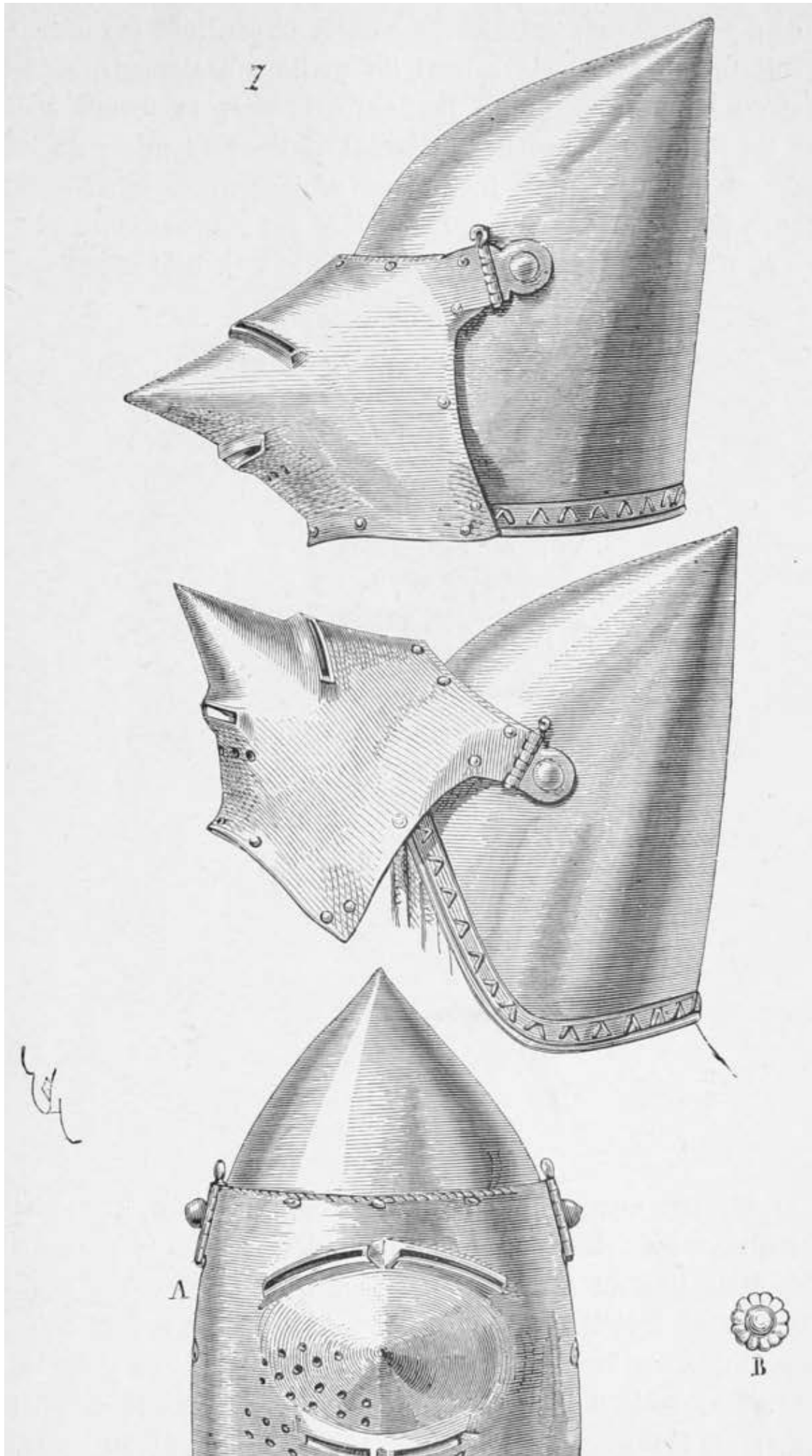
- [1] Nicolle (1999-journal), p. 583.
- [2] Peterson 1968 (*Encyclopaedia Britannica*, “Helmet”)
- [3] Gravett (2008), p. 115
- [4] Wise 1975, p. 15
- [5] Chisholm, Hugh, ed. (1911). "Basinet". *Encyclopædia Britannica* 3 (11th ed.). Cambridge University Press. p. 480.
- [6] Nicolle (1996), pp.50-51.
- [7] Nicolle (1996) p. 59.
- [8] Gravett (2008), p. 116
- [9] Bradbury, p. 261
- [10] Boeheim 1890, p. 34
- [11] Lucchini, pp. 45-46
- [12] Front view
- [13] Viollet-le-Duc 1874, *Dict. mobilier* V, p.157
- [14] Lucchini, pp. 45-46.
- [15] Miller, p. 9.
- [16] De Vries and Smith, p. 176
- [17] Oakeshott, p. 117
- [18] Oakeshott, p. 117.
- [19] Viollet-le-Duc 1874, p.160
- [20] Rothero, p. 25.
- [21] Rothero p. 3.
- [22] Nicolle (2000), P. 20.
- [23] Gravett (1985), p. 41.
- [24] Bennett, p.23.
- [25] Nicolle (1983), p. 34.
- [26] Rothero, p. 33
- [27] Rothero, p. 3.
- [28] Rothero, p. 35.

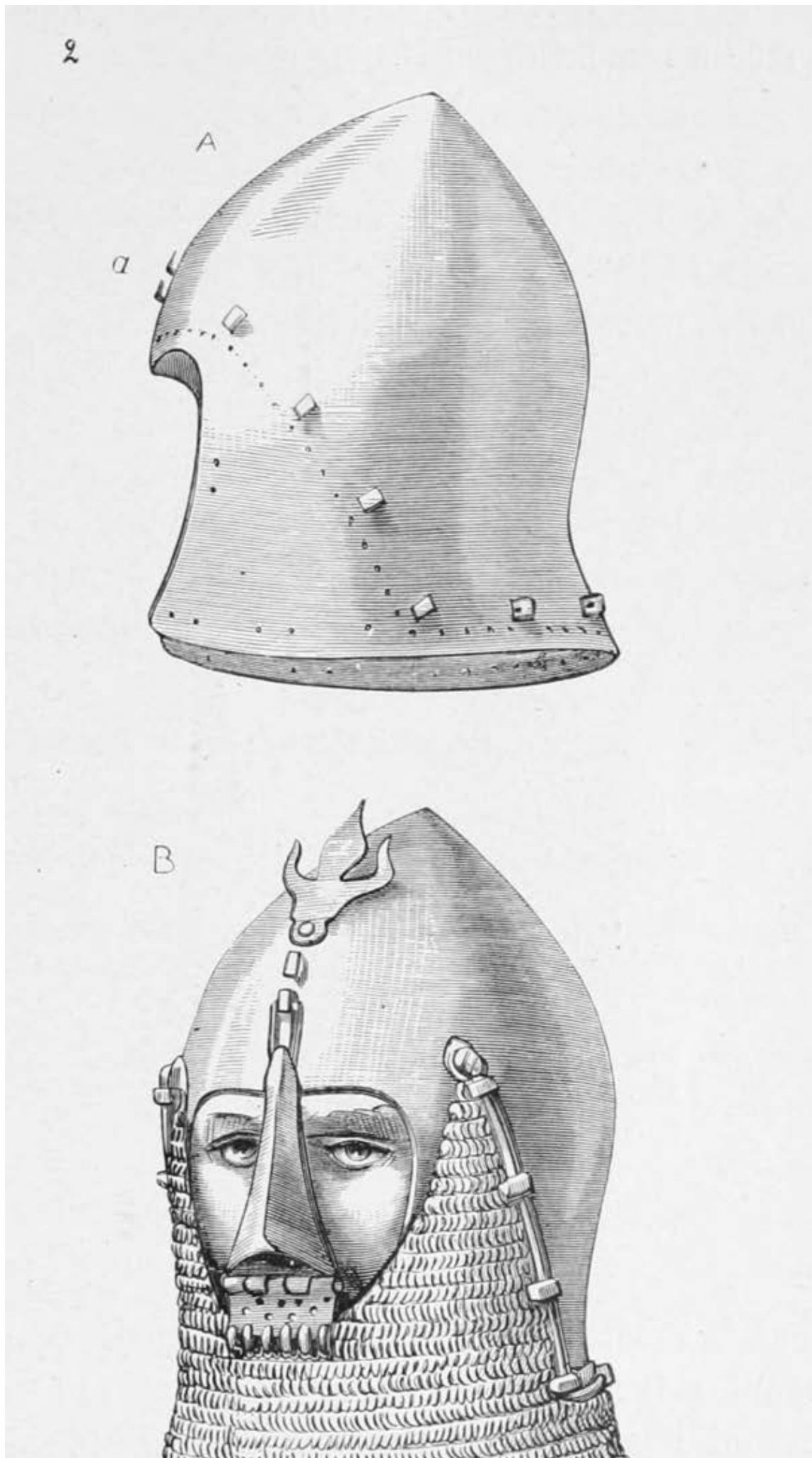
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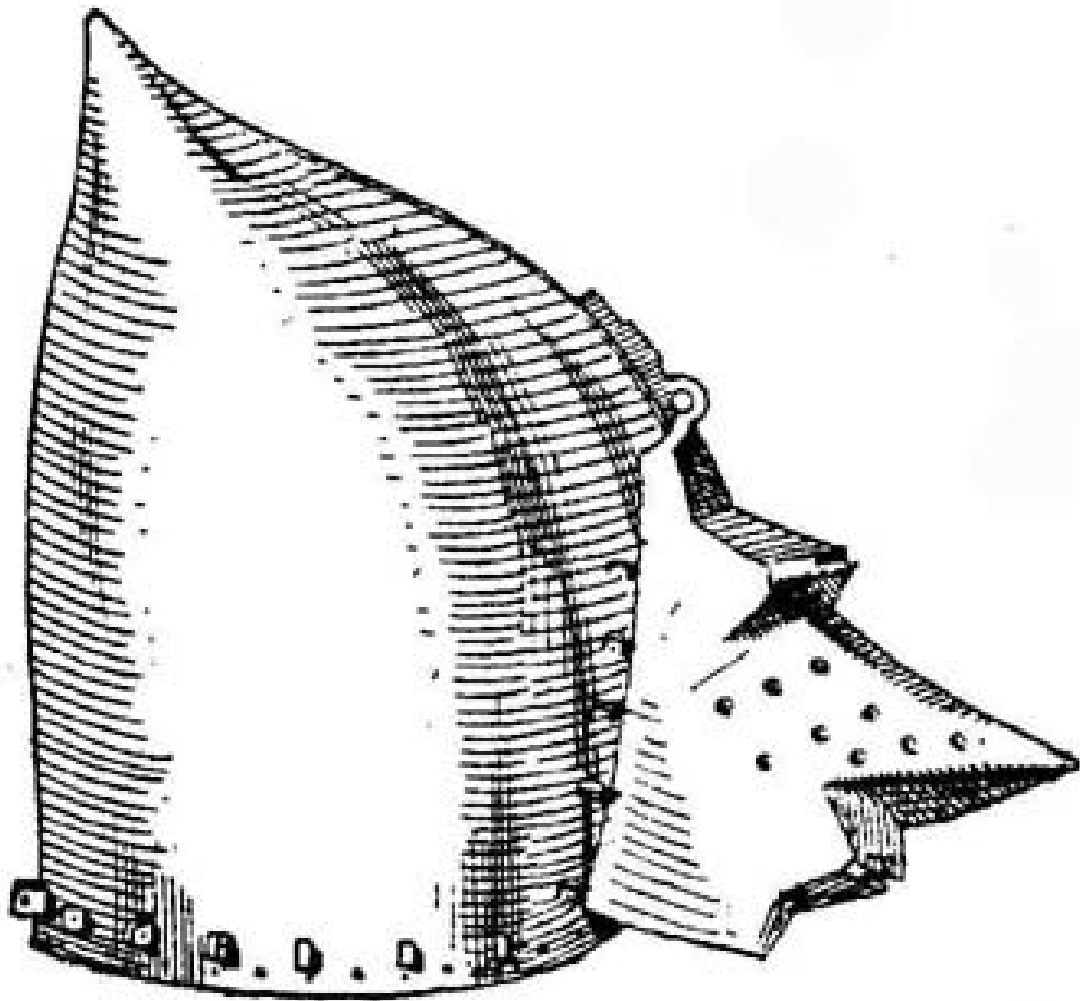
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- Viollet-le-Duc, Eugène Emmanuel (1874). "Bascinet". *Encyclopaedia Dictionnaire raisonné du mobilier français* **5**. Paris: V. A. Morel. p. 157.
- Viollet-le-Duc, Eugène Emmanuel (1875). "Heaume". *Encyclopaedia Dictionnaire raisonné du mobilier français* **6**. Paris: V. A. Morel. p. 118.

4.7 External links

- Spotlight: The 14th Century Bascinet (myArmoury.com article)



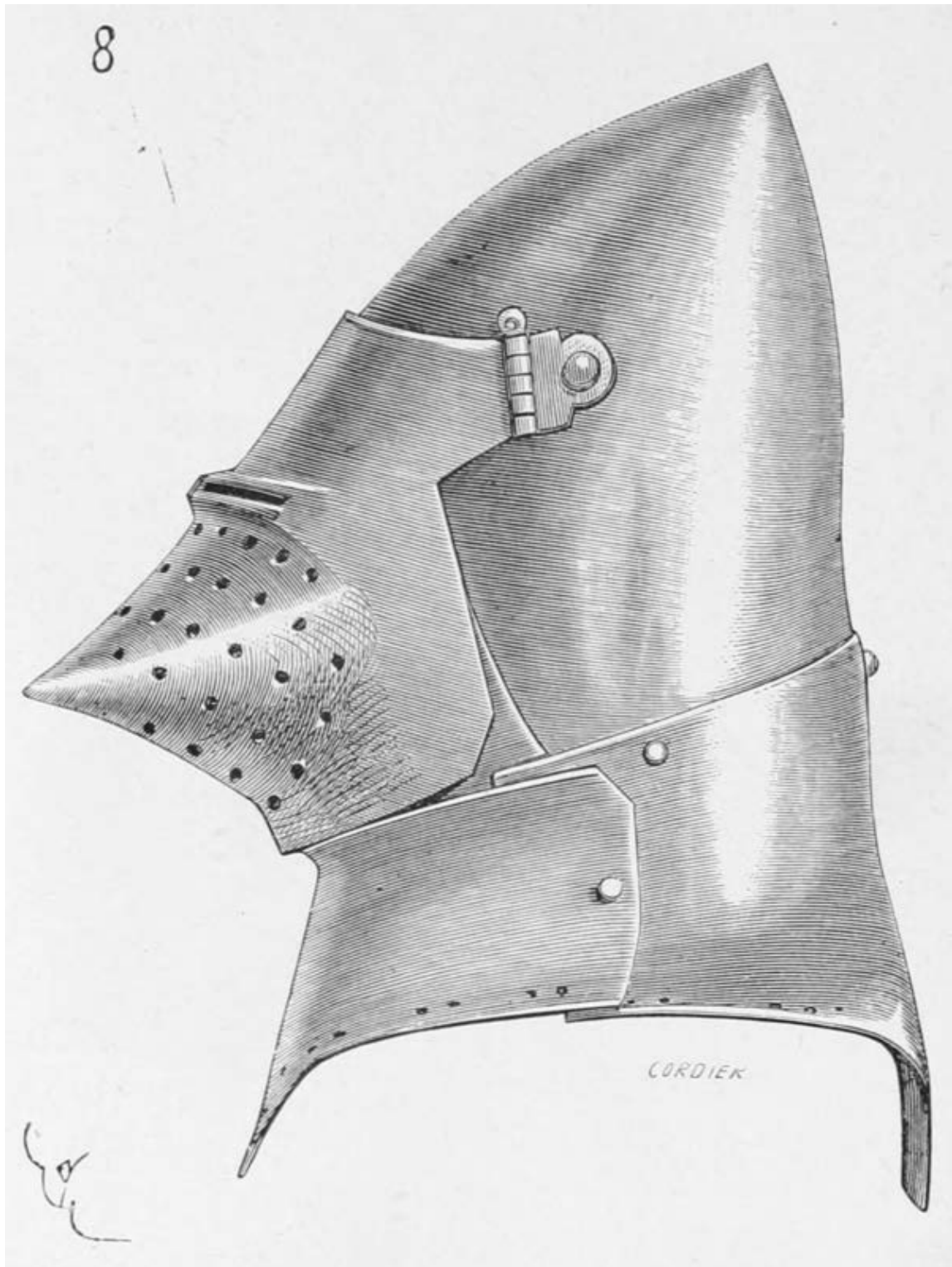




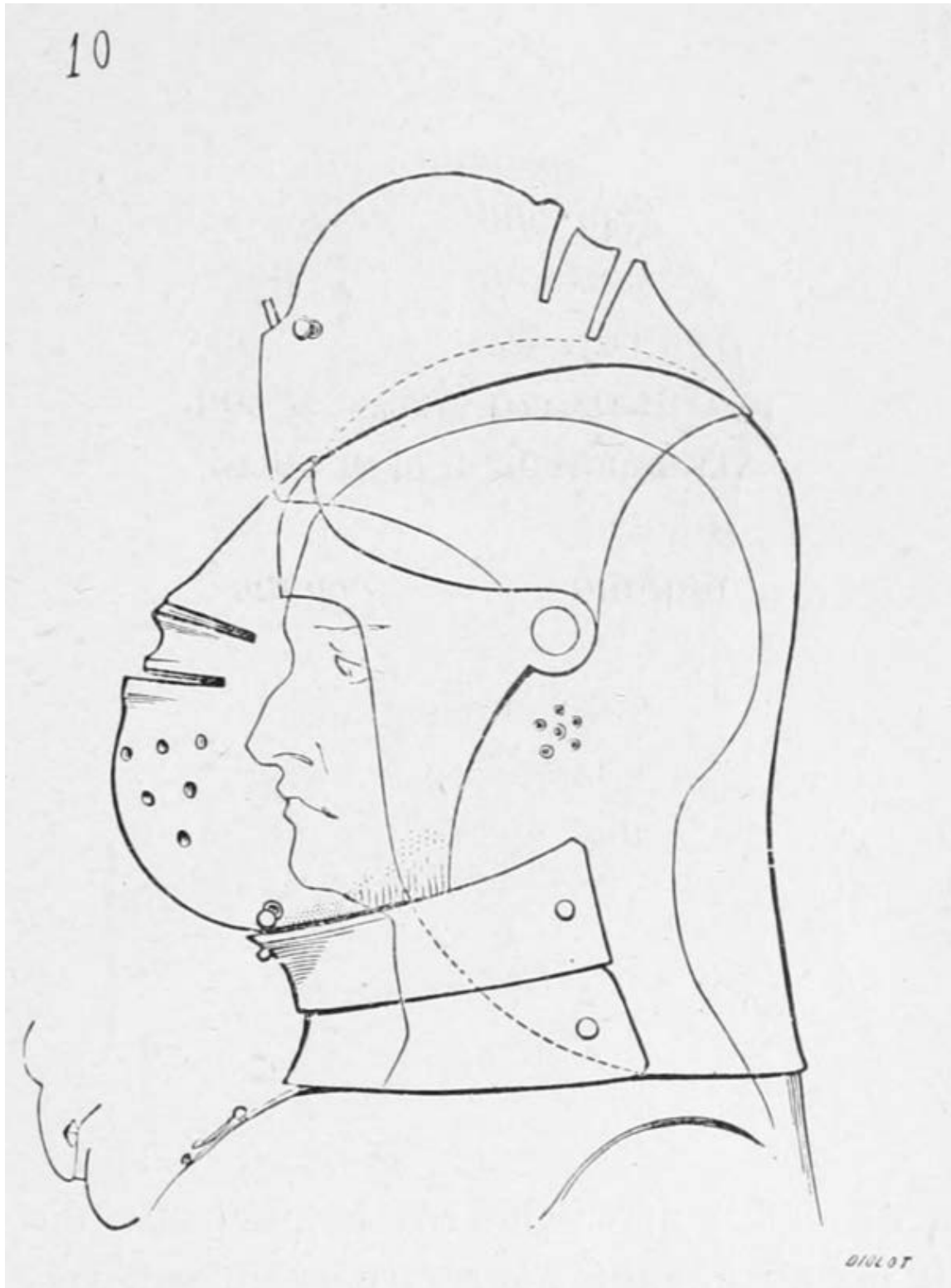
Bascinet fitted with a klappvisor



Bascinet, Milan, c. 1400: the "hounskull" or "pig faced" type of bascinet visor was considerably larger than earlier forms.^[12]



Early great bascinet, c. 1400, with plate gorget and exaggeratedly tall skull. Note how the skull of the helmet is riveted to the rear gorget plate.



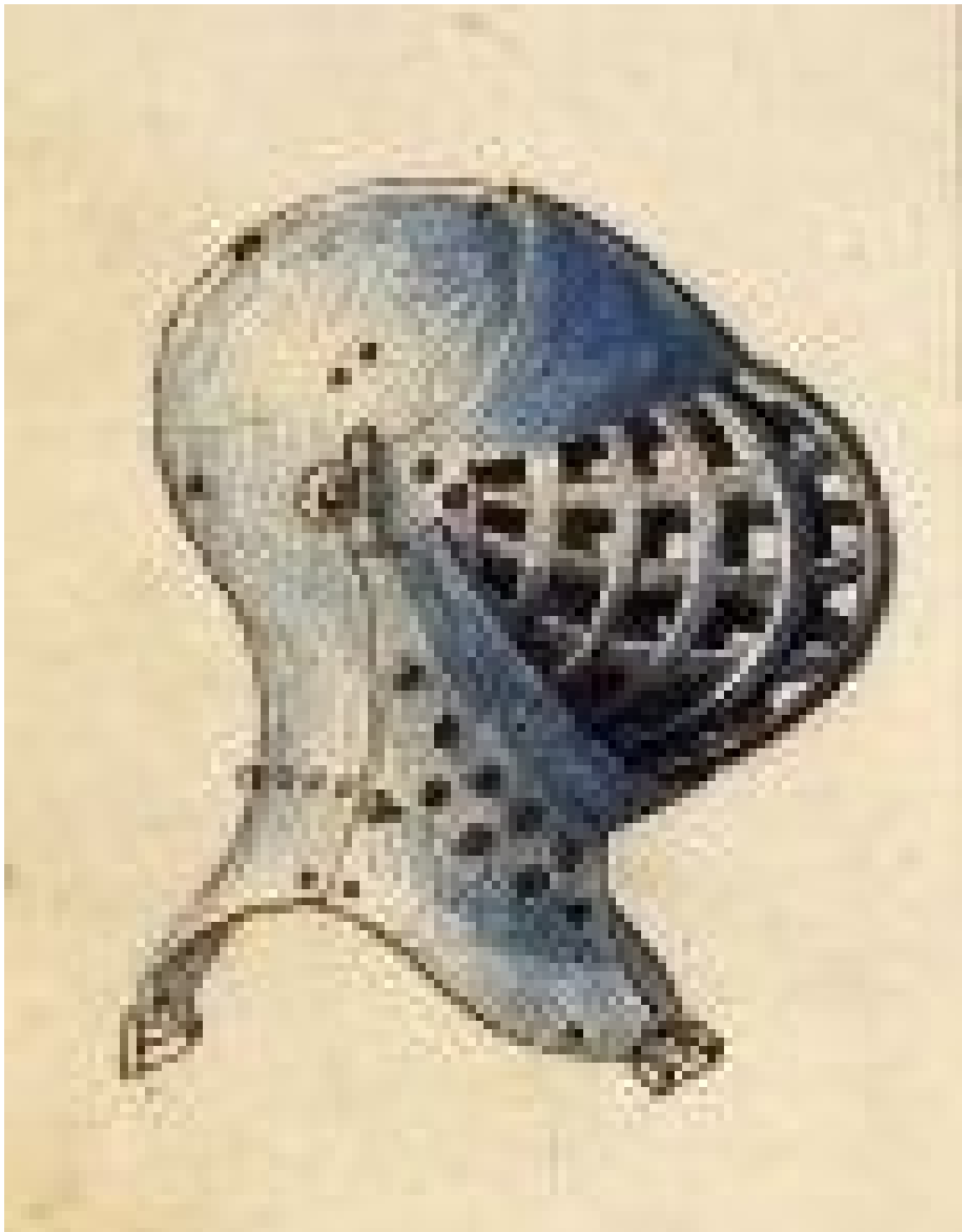
Later great bascinet (c. 1440) with rounded skull and visor - showing the position of the wearer's head and the rotation of the visor



Illustration from a 15th-century manuscript showing horsemen wearing bascinets with the rounded visor used from c.1410



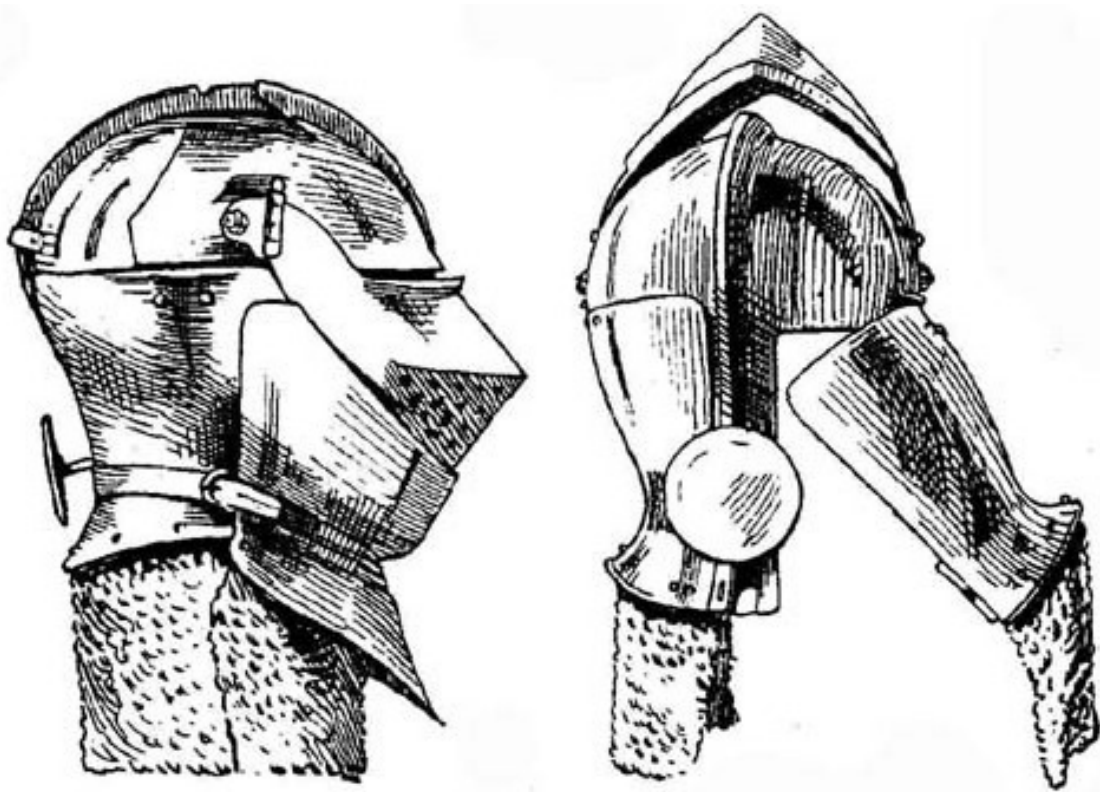
Knight wearing a great bascinet. The strap fixing the helmet to the breastplate is visible as is the impossibility of rotating the helmet. German painting of 1435, by Konrad Witz



A late-period great bascinet for tournament use. Note the skull and back gorget are formed in one piece, and there are strapping points to secure the helmet to the cuirass.

Chapter 5

Armet



Construction of a classic armet (c. 1490), it is fitted with a wrapper and aventail, and the method of opening the helmet is shown

The **Armet** is a type of **helmet** which was developed in the 15th century. It was extensively used in **Italy**, **France**, **England**, the **Low Countries**, **Spain** and **Hungary**. It was distinguished by being the first helmet of its era to completely enclose the head while being compact and light enough to move with the wearer. Its use was essentially restricted to the fully armoured **man-at-arms**.

5.1 Appearance and origins

As the armet was fully enclosing, and narrowed to follow the contours of the neck and throat, it had to have a mechanical means of opening and closing to enable it to be worn. The typical armet consisted of four pieces: the skull, the two large hinged cheek-pieces which locked at the front over the chin, and a **visor** which had a double pivot, one either side of the skull. The cheek-pieces opened laterally; when closed they overlapped at the chin, fastening by means of a spring-pin which engaged in a corresponding hole, or by a swivel-hook and pierced staple. A multi-part



Armet of an English Greenwich armour c. 1585. The method of locking the cheek-pieces can be seen at the chin: a swivel-hook engages a pierced staple. The lower edge of the helmet has a gutter-like rim which engages with a flange running around the upper edge of the gorget.

reinforcement for the bottom half of the face, known as a *wrapper*, was sometimes added; its straps were protected by a metal disc at the base of the skull piece called a *rondel*. The visor attached to each pivot via hinges with removable pins, as in the later examples of the *bascinet*. This method remained in use until c. 1520, after which the hinge disappeared and the visor had a solid connection to its pivot. The earlier armet often had a small *aventail*, a piece of mail attached to the bottom edge of each cheek-piece.^[1]

The earliest surviving armet dates to 1420 and was made in Milan.^[2] An Italian origin for this type of helmet therefore

seems to be indicated. The innovation of a reduced skull and large hinged cheek pieces was such a radical departure from previous forms of helmet that it is highly probable that the armet resulted from the invention of a single armourer or soldier and not as the result of evolution from earlier forms.^[3]

5.2 Use and variations

The armet reached the height of its popularity during the late 15th and early 16th centuries when western European full **plate armour** had been perfected. Movable face and cheek pieces allowed the wearer to close the helmet, thus fully protecting the head from blows. The term armet was often applied in contemporary usage to any fully enclosing helmet, however, modern scholarship draws a distinction between the armet and the outwardly similar **close helm** on the basis of their construction, especially their means of opening to allow them to be worn. While an armet had two large cheekpieces hinged at the skull and opened laterally, a close helm instead had a kind of movable **bevor** which was attached to the same pivot points as its visor and opened vertically.^[4]

The classic armet had a narrow extension to the back of the skull reaching down to the nape of the neck, and the cheekpieces were hinged, horizontally, directly from the main part of the skull. From about 1515 the Germans produced a variant armet where the downward extension of the skull was made much wider, reaching as far forward as the ears. The cheekpieces on this type of helmet hinged vertically on the edges of this wider neck element.^[5] The high quality English **Greenwich armours** often included this type of armet from c. 1525. Greenwich-made armets adopted the elegant two-piece visor found on contemporary **close helmets**; armets of this form were manufactured until as late as 1615. The lower edge of such helmets often closed over a flange in the upper edge of a gorget-piece. The helmet could then rotate without allowing a gap in the armour that a weapon point could enter.^[6]

The armet is found in many contemporary pieces of artwork, such as Paolo Uccello's "Battle of San Romano," and is almost always shown as part of a **Milanese armor**. These depictions show armets worn with tall and elaborate crests, largely of feathered plumes; however, no surviving armets have similar crests and very few show obvious provision for the attachment of such crests.^[7]

The armet was most popular in Italy, however, in England and Western Europe it was widely used by men-at-arms alongside the **sallet**, whilst in Germany the latter helmet was much more common. It is believed that the **close helm** resulted from a combination of various elements derived from each of the preceding helmet types.

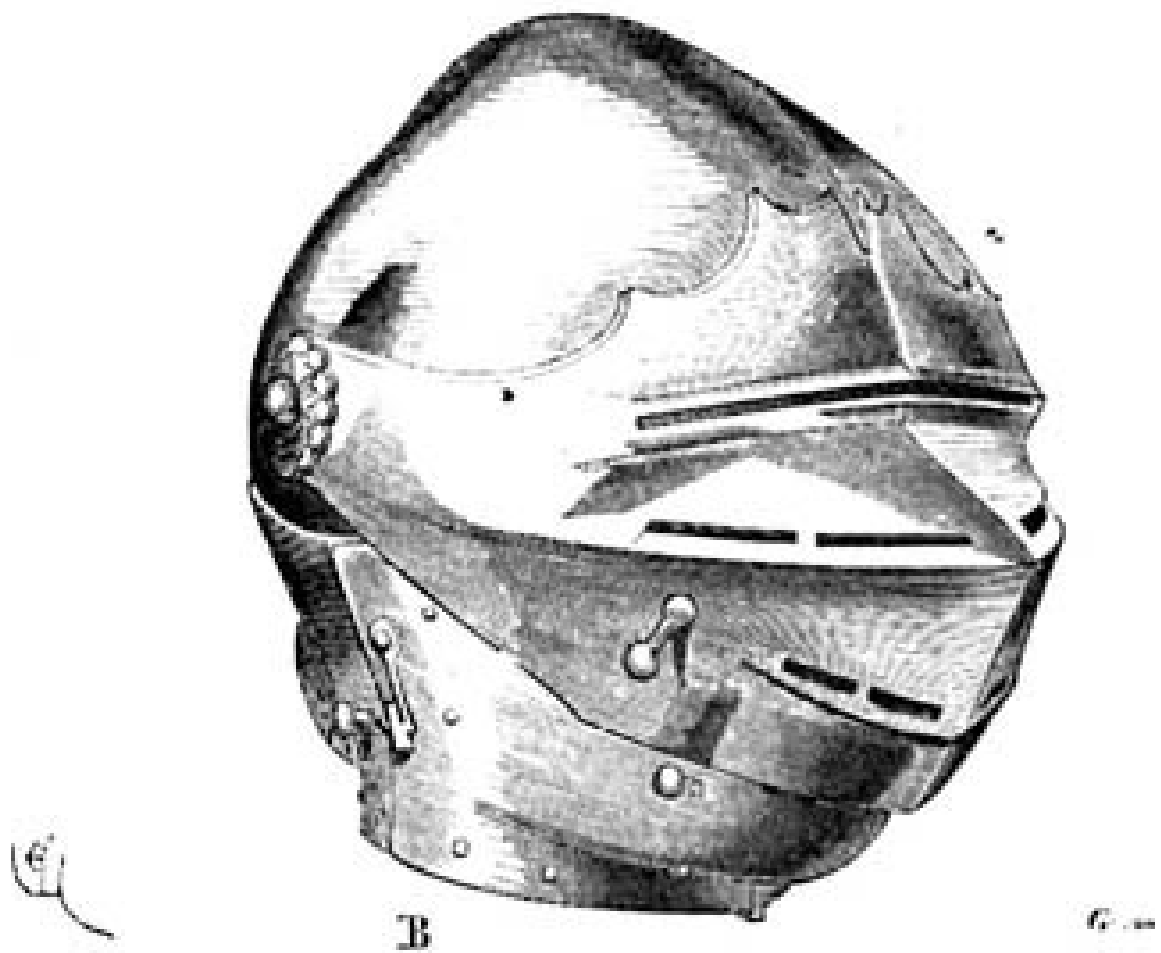
5.3 References

- [1] Oakeshott, pp. 118-121
- [2] Oakeshott, p. 118
- [3] Oakeshott, p. 118
- [4] Oakeshott p. 121
- [5] Oakeshott p. 123
- [6] Gravett, pp. 20, 62
- [7] Oakeshott, pp. 119-120

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Comparison of close helm and armet in open position. Note the close helm uses a single pivot point for the double visor and bevor, while the armet has hinged cheek plates that lock in place.

Chapter 6

Sallet

The **sallet** (also called *celata*, *salade* and *schaller*) was a war **helmet** that replaced the **bascinet** in Italy, western and northern Europe and **Hungary** during the mid-15th century. In Italy, France and England the **armet** helmet was also popular, but in Germany the sallet became almost universal.

6.1 Origins

The origin of the sallet seems to have been in Italy where the term *celata* is first recorded in an inventory of the arms and armour of the **Gonzaga** family dated to 1407.^[1] In essence the earliest sallets were a variant of the bascinet, intended to be worn without an **aventail** or **visor**. To increase protection to the face and neck, that the abandonment of the visor and aventail would have exposed, the sides of the helmet were drawn forward at the bottom to cover the cheeks and chin and the rear was curved out into a flange to protect the neck. The barbute or *barbata* was a related helmet appearing in Italy at much the same time as the sallet. Unlike the sallet, the fully developed barbute consciously copied elements of the Classical **Corinthian helmets** of ancient times.^[2]

6.2 Later developments and regional variation

The sallet became popular in France, England and the **Netherlands** through contact with Italy and eventually was adopted in Germany. Regional styles developed, which were catered for by the great armour manufacturing centres of northern Italy (especially Milan) and southern Germany (Augsburg and Nuremberg). However, though a sallet, or complete armour, might be German in style it could have been of Italian manufacture, or vice versa. The German sallet may have been the product of the melding of influences from the Italian sallet and the deep-skulled “German war-hat,” a type of brimmed *chapel de fer* helmet.^[3]

Later Italian sallets (by c. 1460) lost their integral face protection and became open-faced helmets with gracefully curved surfaces. In this simple state they were favoured by lighter-armed troops, especially archers and crossbowmen, whose uninterrupted vision was at a premium. For more heavily armoured troops a greater level of protection could be afforded by the attachment of a plate re-inforce for the brow of the helmet and a deep visor, usually of the 'bellows' form which incorporated many ventilation slits. Such helmets would have been worn with a stiffened mail collar, termed a “standard,” which protected the throat and neck. Some Italian-style sallets were provided with a covering of rich cloth, usually velvet, which was edged in silver-gilt or gilded brass; ornamental decoration in the same metals could be added to the surface of the helmet, allowing areas of cloth to show through.^[4]

In the period 1450-1460 a distinctive German style of sallet appeared. It was round-skulled but was less curvaceous than the Italian sallet, its most obvious feature was that the rear of the helmet was drawn out into a long tail, sometimes consisting of a number of lames. One characteristic that distinguishes early German sallets from later German sallets up to c.1495, is the length of the helmet tail, which became more pronounced over time. The front of these helmets sometimes extended down to cover the upper-face, with eye-slits provided for vision. Other versions retained the same outline, but the upper-face was protected by a movable half-visor. Most German sallets were worn with a separate scoop-shaped plate **gorget**, called a **bevor**, that extended from the upper chest to just below the nose and protected the wearer's lower-face and throat. Most needed no added ventilation holes, as there was a natural gap where the visor



Typical light Italian celata (sallet) of the later 15th century

or front of the helmet overlapped the bevor near the wearer's mouth.^[5]

By the mid 15th century a regional variety of sallet had evolved in England and the Netherlands, termed the 'English-Burgundian style' (the Netherlands were at that time ruled by the Duke of Burgundy). It was usually worn with a bevor and had very similar facial protection to, and frontal appearance as, the German sallet, but was more curvaceous and possessed a less extreme projection to the rear. In many ways it was intermediate between the German and Italian forms.^[6] French sallets were very similar to the English-Burgundian type and all have been classed as "short-tailed



A late fifteenth-century German sallet, with bevor.

sallets.”^[7]



Sallet in the “English-Burgundian” style, in many ways intermediate between the Italian and German forms

6.3 Demise

In the last generations of German sallets the bevor was articulated from the same pivot as the visor. Initially the bevor was attached inside the skull.^[8] When the long tail at the rear of the helmet was eventually shortened, from c. 1495, these later sallets became virtually indistinguishable from **close helmets**, and the articulation of the bevor moved to the outside of the skull.^[9] The sallet was gradually abandoned for field use in the first two decades of the 16th century, being largely replaced by the close helm and **burgonet**, however, it was retained into the mid century, in a heavily reinforced form, for some types of **jousting**.^[10]

The German-style sallet was the model for the World War I German *Stahlhelm*, whereas the **kettle hat** inspired the contemporary British and French helmets.^[11] The sallet was the forerunner of the modern **combat helmet** and **firefighter’s helmet**.

In **Scottish heraldry**, a representation of a sallet is still used today to display the **crest** of a company or organisation, as opposed to the conventional helmet used by individuals.

6.4 Gallery

- German Sallets
- Mid-15th-century Italian sallet for an archer
- Italian bellows visored sallet (transitional from sallet to **close helm**)

- Late German visored sallet (transitional to the **close helm**) the bevor and the brow-reinforce attach to the same pivot as the upper visor, and the tail at the rear of the helmet is much shorter than in earlier forms.

6.5 References

- [1] Oakeshott, p. 109
- [2] Oakeshott, pp. 109-110
- [3] Grancsay, p. 21-22
- [4] Oakeshott, pp. 113-114
- [5] Oakeshott, pp. 111-113
- [6] Oakeshott, p. 111
- [7] Grancsay, p. 24
- [8] Nickel, p. 16.
- [9] Grancsay, p. 28
- [10] Grancsay, pp. 28-29
- [11] Bedford, p. 116

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6.7 External links

Chapter 7

Close helmet

Not to be confused with **Enclosed helmet**.

The **close helmet**, also called the **close helm** was a military **helmet** worn by **knights** and other **men-at-arms** in the Late Medieval and Renaissance eras. It was also used by some heavily armoured, pistol-armed, **cuirassiers** into the mid 17th century. It was a fully enclosing helmet with a pivoting **visor** and integral **bevor**.

7.1 Characteristics

The close helmet was developed from the later versions of the **sallet** and the superficially similar **armet** in the late 15th century. In contemporary sources it was sometimes also referred to as an 'armet', though modern scholarship draws a clear distinction between the two types.^[1]

While outwardly very similar to the **armet**, the close helmet had an entirely different method of opening. Like the **armet**, the close helmet followed the contours of the head and neck closely, and narrowed at the throat, therefore it required a mechanical method for opening and closing. While an **armet** opened laterally using two large hinged cheekpieces, a close helmet instead opened vertically via an integral rotating **bevor**, which was attached to the same pivots as its visor. The moving parts were usually secured when closed by pivot-hooks engaging pierced staples. Alternatively, spring-loaded studs could be employed. The **bevor** was often held closed by a strap.^[2]

7.2 Variations

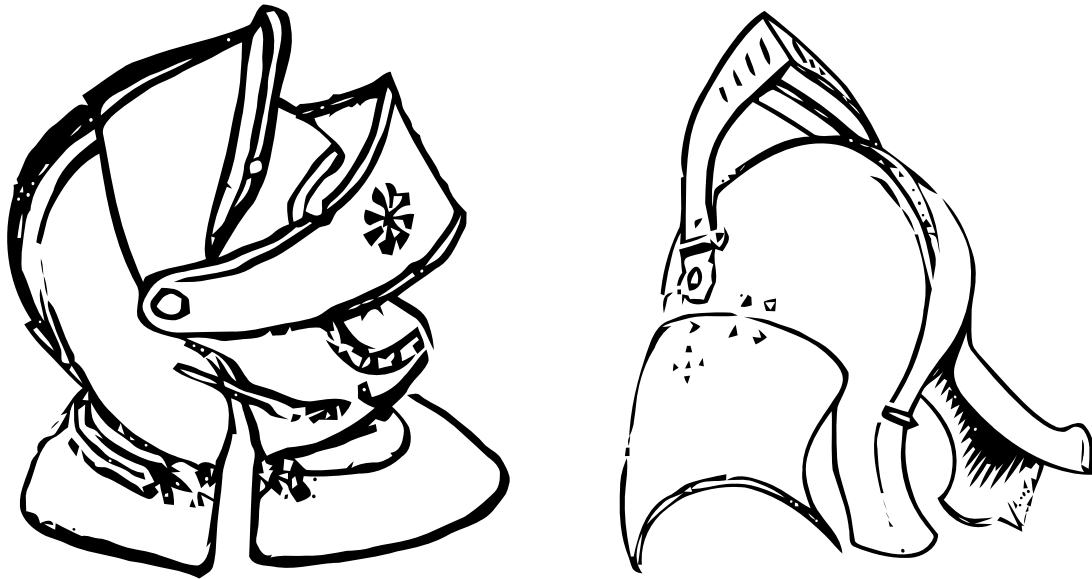
Beginning at around 1500 armour, including helmets, became more immediately influenced by fashion, especially in civilian clothing. As a result close helmets came in a huge variety of forms. The earliest close helmets resembled contemporary **armets**. In Italy, England and France in the period 1510-25 helmets were rounded with visors of the 'sparrow's beak' form, whereas in Germany the fluted 'Maximillian' style of armour produced distinctive types of helmet. The skulls of these helmets were globular with a low crest, many were decorated with fluting but some were plain. Two types of visor were produced, the **Nuremberg** form which had a 'bellows' shape, and the **Augsburg** form which was more projecting and is commonly called a 'monkey face'.^{[3][4]}

From the 1520s a new, almost universal, variety of close helmet was developed. The previous forms of one-piece visor were replaced by a more complex system of face covering. The visor was split, below the eye-slits, into two independently pivoting parts. The lower half, called the ventail or upper bevor, was projecting and shaped like the prow of a modern ship. The upper visor, when closed, fitted within the upper edge of the ventail; it could be raised independently of the ventail by the provision of a projecting lifting peg. At the same time, on most helmets, the base of the bevor and the lower edge of the skull had laminated gorget plates attached. Crests, running from front to back tended to become taller in the course of the 16th century, becoming particularly exaggerated in some Italian-made examples, before becoming reduced in size at the century's close.^{[5][6]}

There are many helmets surviving with 'grotesque' visors. These are thought to have been used as part of a 'costume armour' worn at parades and during festivities. Some of these masks portrayed the heads of animals or demons, whilst others were evidently for comic effect, being caricatures of the faces of their owners.^[7]



French close helmet of the later split-visor type, c. 1555-1560



Comparison of close helm and armet in open position. Note the close helm uses a single pivot point for the double visor and bevor, while the armet has hinged cheek plates that lock in place.

7.3 Use

The close helmet was used on the field of battle, but was also popular for use in tournaments. Wealthy men often owned “garnitures”, which were armours with interchangeable parts to suit heavy or light field use, and the many different forms of tournament combat. Garnitures would usually include elements for reinforcing the left side of the helmet for use in jousting. Such reinforcing pieces were called “double pieces” or “pieces of advantage”.^[8]

7.4 References

- [1] Oakeshott, p. 121
- [2] Oakeshott, p. 122
- [3] Oakeshott, pp. 121-122
- [4] Gravett, p. 17
- [5] Oakeshott, pp. 218-221
- [6] Gravett, p. 17
- [7] Oakeshott, p. 123
- [8] Gravett, pp. 20 and 62

7.5 Bibliography

- Gravett, Christopher (2006) *Tudor Knight*. Osprey Publishing, London.
- Oakeshott, Ewart (2000) *European Weapons and Armour. From Renaissance to the Industrial Revolution*. The Boydell Press, Woolbridge. ISBN 0-85115-789-0



German close helmet of the Maximilian type, with bellows visor, c. 1520

7.6 Further reading

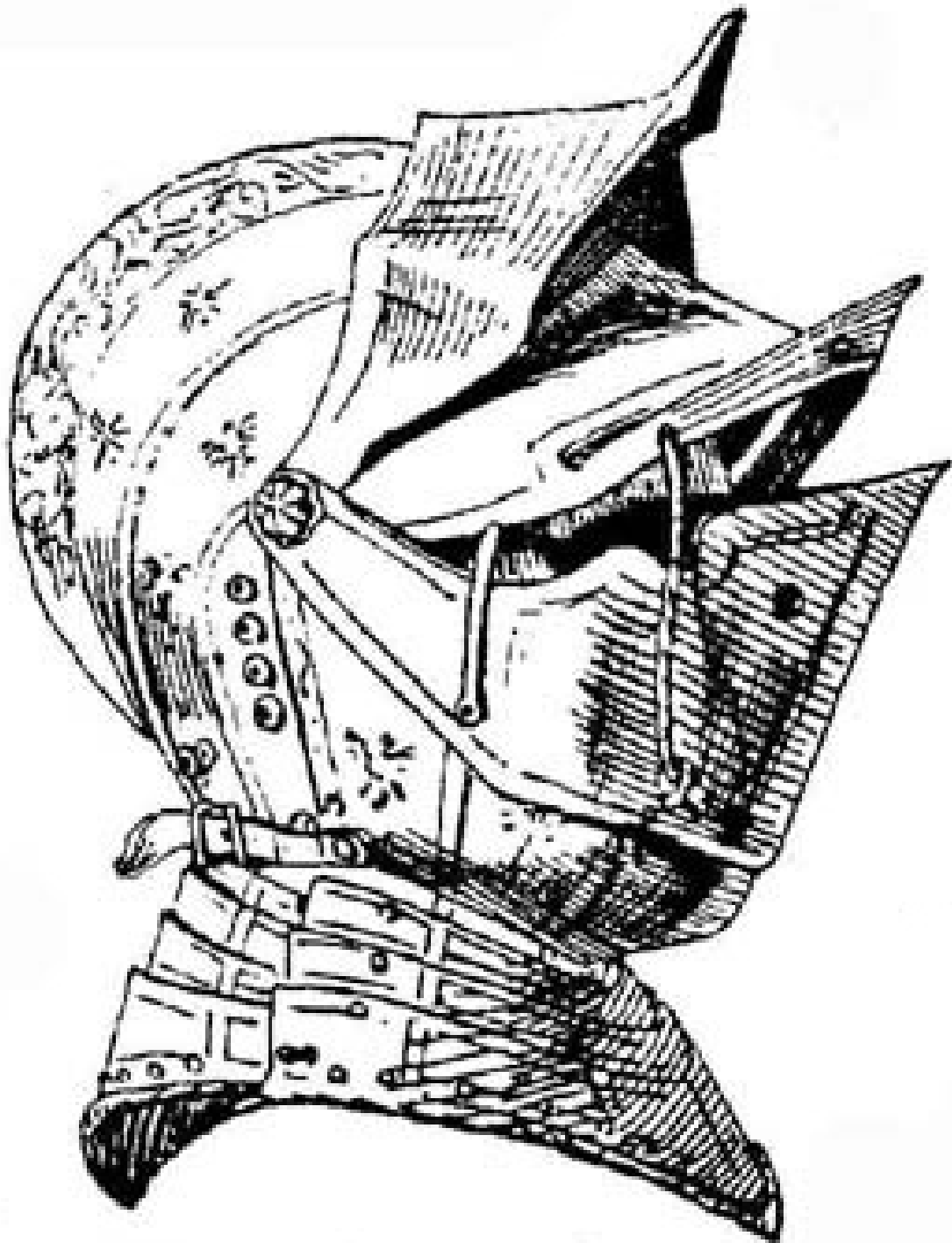
- Edge, David. *Arms and Armour of the Medieval Knight*. London: Bison Books, 1988
- Wallace Collection Catalogue. *European arms and Armour Vol. 1: Armour*.

7.7 External links

- [Modern reproduction patterns for the Close helmet](#)



Close helmet with grotesque visor (modern reproduction of a German helmet of c. 1520 style)



A close helmet with a split visor (also with an extra pivoting peak), c. 1560 (notice that its bevor - secured by a strap - is attached to the same pivot as the visors)

Chapter 8

Barbute

A **barbute** (termed a *barbuta* in Italian) is a visorless war helmet of 15th-century Italian design, often with distinctive “T” shaped or “Y” shaped opening for the eyes and mouth. The name is first recorded in an inventory made for the Gonzaga family of Mantua in 1407. It can be considered as a specialised form of the sallet. The barbute resembles classical Greek helmets (most strikingly the Corinthian) and may have been influenced by a renewed interest in ancient artifacts which was common in this period.^[1]

8.1 Characteristics

The defining characteristic of the barbute is the fact that the shape of the helmet extends all the way down to cover both sides of the face. Regardless of the type of opening, T-shaped, Y-shaped or arch-shaped, this characteristic was always present. This design of helmet enabled the user to wear a gorget.^[2] In place of a plate gorget, the barbute was often worn with a stiffened mail collar, termed a “standard,” which protected the throat and neck. In some examples, there is a central, narrow protrusion extending down from the top of the opening, designed to protect the wearer’s nose. Sometimes, like Italian sallets, barbutes were covered by a rich decorative fabric, typically heavy velvet.

Unlike the sallet, the barbute seems to have enjoyed little popularity outside Italy.

The main differences between the barbute and the Greek hoplite’s helm to which it is often compared is the difference in material and the lack of a prominent decorative crest. Ancient Greeks used bronze, while most barbutes were constructed of steel.

Barbutes were made most commonly from a single sheet of steel using the metal smithing process of raising until the piece assumed the desired shape.^[3] Many barbutes feature a low ridged crest forged into the top of the helmet’s skull which served to strengthen the helmet without adding a significant amount of weight.

8.2 In Popular Culture

- In The Lord of the Rings film franchise, three legions give their soldiers barbutes: The Men of Gondor wear conical-topped steel ones featuring seagull wings subtly embossed out from the inside. The Elven troops of the Last Alliance (the High Elves of Middle-earth) wear gold barbutes with Corinthian-looking crests on top. Lastly, the Easterlings (Men of Rhun) wear three-horned dome helmets made of bronze with faceplates that resemble the faceplate of a barbute helmet with chin protection.
- The Star Wars characters, Boba Fett and Jango Fett, also wear helmets with a T-shaped visor that vaguely resembles a barbute, as do most other Mandalorians and Phase I Clonetroopers within the franchise.
- In Marvel Comic’s X-Men, villain Magneto wears a specialized barbute to thwart psychic abilities that might be used against him.



Original 15th century barbut of the T-shaped design from the Philadelphia Museum of Art's Kretzschmar von Kienbusch Collection of arms and armour

8.3 References

- [1] Oakeshott, pp. 109-110
- [2] Leonello Boccia, *Armi Italiane*, Zanichelli, Bologna, 1966.
- [3] *Quattro Secoli di Armi Bianche*, I Documentari, Novara, 1973.



A modern reconstruction based on the Y-shaped barbute design

8.4 Bibliography

- Oakeshott, Ewart (1980) *European Weapons and Armour: From the Renaissance to the Industrial Revolution*. Lutterworth Press.

Chapter 9

Burgonet



German burgonet of classic form, 16th century

The **burgonet helmet** (sometimes called a **burgundian sallet**) was a Renaissance-era and early modern combat helmet. It was the successor of the sallet.

9.1 Characteristics

The burgonet helmet is characterised by a skull with a large fixed or hinged peak projecting above the face-opening, and usually an integral, keel-like, crest or comb running from front to rear. Attached to the skull are substantial hinged cheekpieces which usually do not meet at the chin or throat. A flange projects from the lower parts of the skull and cheekpieces to protect the back and sides of the neck. Though typically a relatively light helmet and open faced, a **falling buffe**, a sort of visor that was closed by being drawn up rather than down, was sometimes used. Some helmets, often termed “close burgonets”, were made which took elements, such as the peak, crest and falling buffe, of the burgonet and combined them with the hinged **bevor** of the **close helmet**.^{[1][2]}

9.2 Use

Commonplace throughout **Europe**, it first came into use early in the 16th century and had attained its classic form by c. 1550.^[3] Accompanied by **plate armour**, burgonets were mostly worn by cavalry: **cuirassiers**, **demi-lancers** and, in Eastern Europe, **hussars**.

The **Border Reivers**, of the English-Scottish borderlands, were very fond of burgonets and the **morion** in Elizabethan times, and as a result reivers were often called *steil* (steel) *bonnets*.^{[4][5]} Burgonets were also a popular helmet type among the **Polish winged hussars**, where they merged with types of **lobster-tailed pot helmets** (*zischagge*), often featuring a nasal bar or facial guard.

The burgonet was common among the **mercenary Swiss infantry** who were **pikemen** who could defend themselves against **cavalry** (perhaps taking helmets of this form as trophies). Following the appearance of the **Adrian** and **Brodie helmets** and the **Stahlhelm**, in the **First World War**, the **Swiss** experimented with a “streamlined” form of the burgonet for their own national helmet, but both designs were rejected.

The factors of utility of the burgonet over older helmets include:

- **Cost**—The main factor in the decision to wear one; burgonets were significantly cheaper than large closed-face helmets.
- **Encumbrance**—**Close helmets** were very bulky and heavy. It could be hard for the wearer to see, breathe or turn his head while wearing one. The burgonet, however, was light and had an open face that gave an advantage in offense.
- **Protection**—The burgonet was not as protective as heavier helms, but still afforded some protection. Having an open face could be remedied with a falling buffe.

9.3 References

- [1] Oakeshott, pp. 214-217
- [2] Gravett, pp. 18 and 32
- [3] Oakeshott, p. 214
- [4] George MacDonald Fraser, *The Steel Bonnets* (New York: Alfred A. Knopf, 1972), 86.
- [5] Keith Durham, *The Border Reivers* (Oxford: Osprey Publishing, 1995), 46.

9.4 Bibliography

- Gravett, Christopher (2006) *Tudor Knight*. Osprey Publishing, London.
- Oakeshott, Ewart (1980) *European Weapons and Armour: From the Renaissance to the Industrial Revolution*. Lutterworth Press.



Intermediate helmet ("close burgonet") with the peak, crest and falling buffe of the burgonet, combined with the hinged bevor of a close helmet.

9.5 External links

- Spotlight: The Burgonet (myArmoury.com article)
- Burgonet for an officer, Nuremberg, circa 1570.



German burgonet, c. 1560, showing the open face of the helmet.

Chapter 10

Aventail

This article is about the piece of medieval armor. For the network technology company, see [Aventail Corporation](#). An **aventail** or **camail** is a flexible curtain of **mail** attached to the skull of a **helmet** that extends to cover the throat,



Historic depiction of a bascinet fitting on the tomb of [Edward of Woodstock](#) (1376)

neck and shoulders. Part or all of the face, with spaces to allow vision, could also be covered. The earliest camails were riveted directly to the edge of the helmet, however, beginning in the 1320s in Western Europe a detachable version replaced this type.^[1] The detachable aventail was attached to a leather band, which was in turn attached to the lower border of the helmet by a series of staples called **vervelles**. Holes in the leather band were passed over the **vervelles**, and a waxed cord was passed through the holes in the **vervelles** to secure it.^[2] Aventails were most commonly seen on **bascinet**s in the 14th century and served as a replacement for a complete mail hood (**coif**). Some aventails were decorated with edging in **brass** or **bronze** links (sometimes gilded), or with a zig-zag lower edge (**vandyked**). By the late 15th century, the aventail had replaced the mail **coif** completely.

10.1 References

[1] Gravett 2008, p. 116

[2] [Bradbury](#), p. 261

10.2 Bibliography

- Bradbury, Jim (2004). “14 Medieval Armour (A-Z of terms: Aventail ~ Bascinet)”. *The Routledge Companion to Medieval Warfare*. Routledge. pp. 261–262.
- Gravett, Christopher (2008) *Knight: Noble Warrior of England 1200–1600*. Osprey Publishing.



14th century bascinet fitted with an aventail.

Chapter 11

Gorget

For the feathers, see *gorget* (bird).

A **gorget** /ˈɡɔrdʒɪt/, from the French *gorge* meaning **throat**, was originally a band of **linen** wrapped around a woman's neck and head in the **medieval period**,^{[2][3]} or the lower part of a simple **chaperon** hood. The term subsequently described a **steel** or **leather collar** designed to protect the **throat**, a set of pieces of **plate armour**, or a single piece of plate armour hanging from the neck and covering the throat and chest. Later, particularly from the 18th century onwards, the gorget became primarily ornamental, serving only as a symbolic accessory on military uniforms, a use which has survived to the modern day in some armies.

The term may also be used of other things such as items of jewellery worn around the throat region in a number of other cultures, for example wide thin gold collars found in **Ireland** dating to the **Bronze Age**.^[4]

11.1 As part of armour

Most **Medieval** versions of gorgets were simple circular neck protectors that were worn under the breastplate and backplate set. These neck plates supported the weight of the plate armour worn over it, and many were equipped with straps for attaching the heavier armour plates. In a suit of fully developed armour of the 15th century the gorget was a set of four or more overlapping circular plates flexibly attached together, the top and bottom plates of which went under the helmet and breastplate respectively, protecting the gap between these rigid pieces. Cheaper versions were just a single plate, joined to its back piece at the sides.

Later, **Renaissance** gorgets were large pieces with a collar and extending down over the chest, protecting it and the heart. These were not worn with a breastplate as part of a full set of armour but instead were worn over clothing. Some gorgets of this period were “parade” pieces that were beautifully etched, gilded, engraved, chased, embossed, or enamelled and very expensive. Gradually the gorget became smaller and more symbolic, and became a single crescent shape worn on a chain, which became increasingly longer so that the gorget no longer protected the throat in normal wear.

The Japanese (**samurai**) form of the *gorget* is known as a *nodowa*.

11.2 As part of military uniforms

As early as 1688, regulations provided for the wearing of gorgets by Swedish army officers. For those of captain's rank the gorget was gilt with the king's monogram under a crown in blue enamel, while more junior officers wore silver-plated gorgets with the initials in gold.^[5]

During the 18th and early 19th centuries, crescent-shaped gorgets of silver or silver gilt were worn by officers in most European armies, both as a badge of rank and an indication that they were on duty. These last survivals of armour were much smaller (usually about three to four inches in width) than their Medieval predecessors and were suspended by chains or ribbons. In the British service they carried the Royal coat of arms until 1796 and thereafter the **Royal cypher**.

Gorgetts ceased to be worn by British army officers in 1830, and by their French counterparts 20 years later. They



The gorget in this 1772 portrait of Colonel George Washington by Charles Willson Peale, was worn in the French and Indian War to show his rank as an officer in the Virginia Regiment.^[1]

were still worn to a limited extent in the Imperial German Army until 1914, as a special distinction by officers of the Prussian Gardes du Corps and the 2nd Cuirassiers “Queen”. Officers of the Spanish infantry continued to wear gorgets with the cypher of King Alfonso XIII in full dress until the overthrow of the Monarchy in 1931. Mexican Federal army officers also wore the gorget with the badge of their branch as part of their parade uniform. This practice ended in 1947.

The gorget was revived as a uniform accessory during Germany’s Third Reich, seeing widespread use within the German military and Nazi party organizations. During World War II, it continued to be used by German military field police, which wore metal gorgets as emblems of authority. German police gorgets of this period typically were flat metal crescents with ornamental designs that were suspended by a chain worn around the neck. Following the German example, the Finnish Defence Forces still use a metal gorget as a distinguishing mark of the duty conscript of a company, and the highly prussianised Chilean army still use the German style metal gorget in parades and in the uniform of their own Military Police.



Elaborately decorated gilt-brass gorget of c. 1630, probably Dutch

11.2.1 Gorgets in Sweden

The gorget was discontinued as a rank insignia for Swedish officers in the Swedish Armed Forces as of 1792, when epaulettes were introduced. However, use of the gorget was revived in 1799, when the Officer of the day was given the privilege of wearing a gorget which featured the Swedish lesser coat of arms. It has since been a part of the officer's uniform (when he or she functions as "Officer of the day"), a custom which continues to this day. The same use of the gorget also continues in Norway, worn by officers / corporals responsible for guard changes, and "Inspecting Officers"



Gorget in a full suit of armour

(officer of the day).

11.3 Gorget patches

Main article: [Gorget patches](#)

The scarlet patches still worn on each side of the collar of the tunics of British Army general officers, and senior officers. There were two types - the first, red with a crimson centre stripe, were for Colonels and Brigadiers, and

red with a gold centre stripe for General Officers. Today, they signify an officer of the General Staff, to which all British officers are appointed on reaching the rank of Colonel; the historic colour differentials are no longer worn. Air officers in the Indian and Sri Lankan air forces also wear gorget patches with one to five stars depending on their seniority.^[6]

RAF officer cadets wear white gorget patches on their service dress and mess dress uniforms. Very similar collar patches are worn by British army officer cadets at Sandhurst on the standup collars of their dark-blue “Number One” dress uniforms. These features of modern uniforms are a residual survival from the earlier practice of suspending the actual gorgets from ribbons attached to buttons on both collars of the uniform. Such buttons were often mounted on a patch of coloured cloth or gold embroidery.

11.4 The functional gorget today

Recent advances in protective armour have led to the gorget being reintroduced into the US Army and Marine Improved Outer Tactical Vest and Modular Tactical Vest systems respectively.

11.5 Other uses

The state flag of South Carolina may feature a stylized gorget in its upper-left quadrant, although this is a matter of controversy.^[7]

The term also refers to a broad patch of metallic-looking iridescent feathers on the throats of many male hummingbirds.

In colonial Australia gorgets were given to Aboriginal people by government officials and pastoralists as insignia of high rank or reward for services to the settler community. Frequently inscribed with the word “King” along with the name of the tribal group to which the recipient belonged (despite the absence of this kind of rank among indigenous Australians), the “breastplates”, as they came to be known, were highly regarded by those who received one.^[8]

11.6 See also

- Shell gorget
- Australian Aboriginal breastplates
- Burke and Wills expedition

11.7 References

- [1] Lossing, Benson John (1859). *Mount Vernon and its associations: historical, biographical, and pictorial*. W.A. Townsend and Company. p. 345.
- [2] Norris, Herbert (1999). *Medieval costume and fashion*. Mineola, N.Y.: Dover Publications. p. 181. ISBN 9780486404868.
- [3] Lewandowski, Elizabeth J. *The complete costume dictionary*. Lanham, Md.: Scarecrow Press, Inc. p. 123. ISBN 9780810877856.
- [4] Dermot F. Gleeson, “Discovery of Gold Gorget at Burren, Co. Clare”, *The Journal of the Royal Society of Antiquaries of Ireland*, Seventh Series, Vol. 4, No. 1 (Jun. 30, 1934), pp. 138-139, JSTOR, with photo.
- [5] Preben Kannik, *Alverdens Uniformer I Farver*, p.151
- [6] <http://www.bharat-rakshak.com/IAF/Heraldry/Uniform/380-Collar-Tabs.html>
- [7] Hicks, Brian (July 11, 2007). “What the heck is that doodad on our state flag?”. *The Post and Courier* (Charleston, South Carolina).
- [8] National Museum of Australia: Aboriginal Breastplates



A Finnish conscript as a duty NCO, wearing a gold-coloured gorget.



A gorget patch as worn by an RAF Officer Cadet



The gorget is in the upper right corner.

Chapter 12

Bevor

A **bevor** is a piece of **plate armour** designed to protect the neck, much like a **gorget**. A bevor can be made of a single solid piece or multiple articulated **lames** around the neck and chin. The bevor was typically worn in conjunction with a **sallet**, and later with a **burgonet**, in a form known as a **falling buffe**. In both cases the two pieces of armour combined to provide protection for the whole of the head and neck. Bevor is also the term used for the hinged plate protecting the lower face and throat in the **close helm**.

12.1 References

12.2 External links

- The bevor's description on Myarmoury.com



Armour with bevor

Chapter 13

Brigandine

Not to be confused with Brigantine.

For the video game, see Brigandine (video game).

A **brigandine** is a form of **body armour** from the **Middle Ages**. It is a cloth garment, generally **canvas** or **leather**, lined with small oblong steel plates **riveted** to the fabric.

13.1 Origins

Protective clothing and armour have been used by armies from earliest recorded history; the King James Version of the Bible [Jeremiah 46:4] translates the Hebrew סִרְיוֹן *SiRYoN* “coat of mail”^[1] as “brigandine”. Medieval brigandines were essentially a refinement of the earlier **coat of plates**, which developed in the late 12th century, typically of simpler construction made of larger plates. The Asian-originated armour reached **Europe** after the **Mongol** invasion in 1240 that destroyed the **Kievan Rus’** and generated extensive damage to the **Kingdom of Hungary** in 1241. The new armour became very popular first in **Eastern Europe**, especially in **Hungary**, towards the end of the 13th century and after having proved effective was adopted by the medieval states from West Europe several decades later.^[2]

Later Brigandines first appeared towards the end of the 14th century, but survived beyond this transitional period between mail and plate, and came into wide use in the 15th century, remaining in use well into the 16th. 15th century brigandines are generally front-opening garments with the nails arranged in triangular groups of three, while 16th century brigandines generally have smaller plates with the rivets arranged in rows.

The brigandine has been confused with the **haubergeon**, while the name is often confused with the **brigantine**, a swift small sea vessel.^[3]

13.2 Construction

The form of the brigandine is essentially the same as the civilian **doublet**, though it is commonly sleeveless. However, depictions of brigandine armour with sleeves are known. The small armour plates were sometimes riveted between two layers of stout cloth, or just to an outer layer. Unlike armour for the torso made from large plates, the brigandine was flexible, with a degree of movement between each of the overlapping plates. Many brigandines appear to have had larger, somewhat 'L-shaped' plates over the central chest area. The rivets, or nails, attaching the plates to the fabric were often decorated, being **gilt**, or of **latten**, and sometimes embossed with a design. The rivets were also often grouped to produce a repeating decorative pattern. In more expensive brigandines the outer layer of cloth was usually of velvet. The contrast between a richly dyed velvet cloth and gilded rivet heads must have been impressive and, unsurprisingly, such armour was popular with high status individuals.

Modern **flak jackets** and **ballistic vests** are based on the same principle: a protective cloth **vest** containing metal plates.

13.3 Use

It was commonly worn over a **gambeson** and **mail shirt** and it was not long before this form of protection was commonly used by soldiers ranging in rank from **archers** to **knights**. It was most commonly used by **Men-at-arms**. These wore brigandine, along with plate arm and leg protection, as well as a helmet. However, even with the gambeson and the mail shirt, a wearer was not as well protected as when wearing **plate armor**. However, the brigandine was probably favored by soldiers who preferred the greater degree of mobility this armour afforded.

Brigandine was simple enough in design for a soldier to make and repair his own armor without needing the high skill of an **armorer**.

A common myth is that brigandines were so-named because they were a popular choice of protection for bandits and outlaws.^[4] This is untrue. Originally the term “brigand” referred to a foot soldier. A brigandine was simply a type of armour worn by a foot soldier. It had nothing to do with its alleged ability to be concealed by bandits. In fact, brigandines were highly fashionable and were ostentatiously displayed by wealthy aristocrats both in European and in Asian courts.

13.4 Similar types

13.4.1 European jack of plates

A similar type of armor was the **jack of plates** or **coat of plates**, commonly referred to simply as a “jack” (although this could also refer to any outer garment). This type of armor was used by common Medieval European soldiers and the rebel peasants known as **Jacquerie**.^[5]

Like the brigandine, the jack was made of small iron plates between layers of felt and canvas. The main difference is in the method of construction: a brigandine is **riveted** whereas a jack is sewn. Jacks were often made from recycled pieces of older **plate armor**, including damaged brigandines and **cuirasses** cut into small squares.^[6]

Jack remained in use as late as the 16th century and was often worn by **Scottish Border Reivers**. Although they were obsolete by the time of the **English Civil War** many were taken to the **New World** by the **Pilgrim Fathers** as they provided excellent protection from **Indian arrows**; one dating back to 1607 was recently found at **Jamestown**.^[7]

13.4.2 Indian “coat of ten thousand nails”

The Indian equivalent of the Brigandine was the Chihal-Ta Hazar Masha, or “Coat of ten thousand nails”: a padded **leather jacket** covered in **velvet** and containing steel plates which was used until the early 19th century. The skirt was split to the waist, allowing the soldier to ride a horse. Matching **vambraces** and boots containing metal plates were also used. It was derived from **Islamic armor** used by the **Saracen** armies. These were often elaborately decorated with gold lace, silk and satin and are highly prized by European collectors.

Tipu Sultan wore armor of this type during his wars against the **East India Company**. The **Turks** used similar armor during the **Russo-Turkish Wars**.

Two complete suits of armor are preserved in the **Hermitage Museum, Leningrad**.^[8]

13.4.3 Chinese brigandine

A type of armour very similar in design to brigandine, known as *dingjia* (Chinese: 铁甲; Pinyin: Dīng jiǎ) was used in medieval China. It consisted of rectangular plates of metal, riveted between the fabric layers with the securing rivet heads visible on the outside.

Russian orientalist and weapon expert Mikhail Gorelik states that it was invented in the 8th century as parade armour for the Emperor’s guards by reinforcing a thick cloth robe with overlapping iron plates, but did not come into wide use until the 13th century, when it became widespread in the newborn **Mongol Empire** under the name of *hatangu degel* (“robe which is as strong as iron”). He also argues that Eastern European **kuyaks** and, supposedly, Western European brigandines originate from this armour.^[9]

This type of armour was still used in China as late as the **Ming** and **Qing** periods. It was favoured by officers for its rich, expensive look and protection. Later examples, however, often lacked iron plates and were merely a military uniform.^[10]

13.4.4 Russian kuyak

In the Moskovian Rus', there was a type of armour known as the *kuyak*. It is thought to have Mongolian origins^{[9][12]} and be analogous to the Central Asian,^[13] Indian and Chinese brigandine armours.^[14] The word “kuyak” is itself a derivative from Mongol *huyag*, which means “armour” (of any type). No known intact examples of this type of armour survived the tumultuous history of Russia, but historical depictions, textual descriptions and photos^[15] remained.

The descriptions, while not offering any in-depth details of the kuyak's construction, suggest a textile body armour reinforced with iron plates (usually not specifying directly the placement thereof, only mentioning the “nails” - rivets, which attached the plates to the layer of cloth), often with long armoured *faulds*, sleeves and/or pauldrons, sometimes covered in expensive textiles like *sateen*, *velvet* or *damask* and decorated with fur.^[16]

Some kuyaks had large “mirror” plates or “shields” attached to the outside. Some descriptions also mention *cotton wool padding*.^[17]

There were also brigandine helmets called “kuyak hats” that used the same principle of construction as the kuyak body armour.^[18]

13.4.5 Japanese kikko armour

Kikko is the Japanese form of brigandine.^[19] Kikko are hexagonal plates made from iron or hardened leather and sewn to cloth.^[20] Kikko can be hidden by a layer of cloth over the kikko^[21] or the kikko can be left exposed. Kikko were used only relatively recently, during the 16th century.^[20]

Kikko comes in many forms including, coats, vests, gloves, arm and thigh protectors and helmet neck guards. Kikko armor was worn as a stand alone defense or under other types of armor as additional protection.

13.5 See also

- Coat of plates
- Jack of plate
- Tatami-do
- kikko
- plated mail
- **mirror plate**—additional enforcement for oriental brigantines

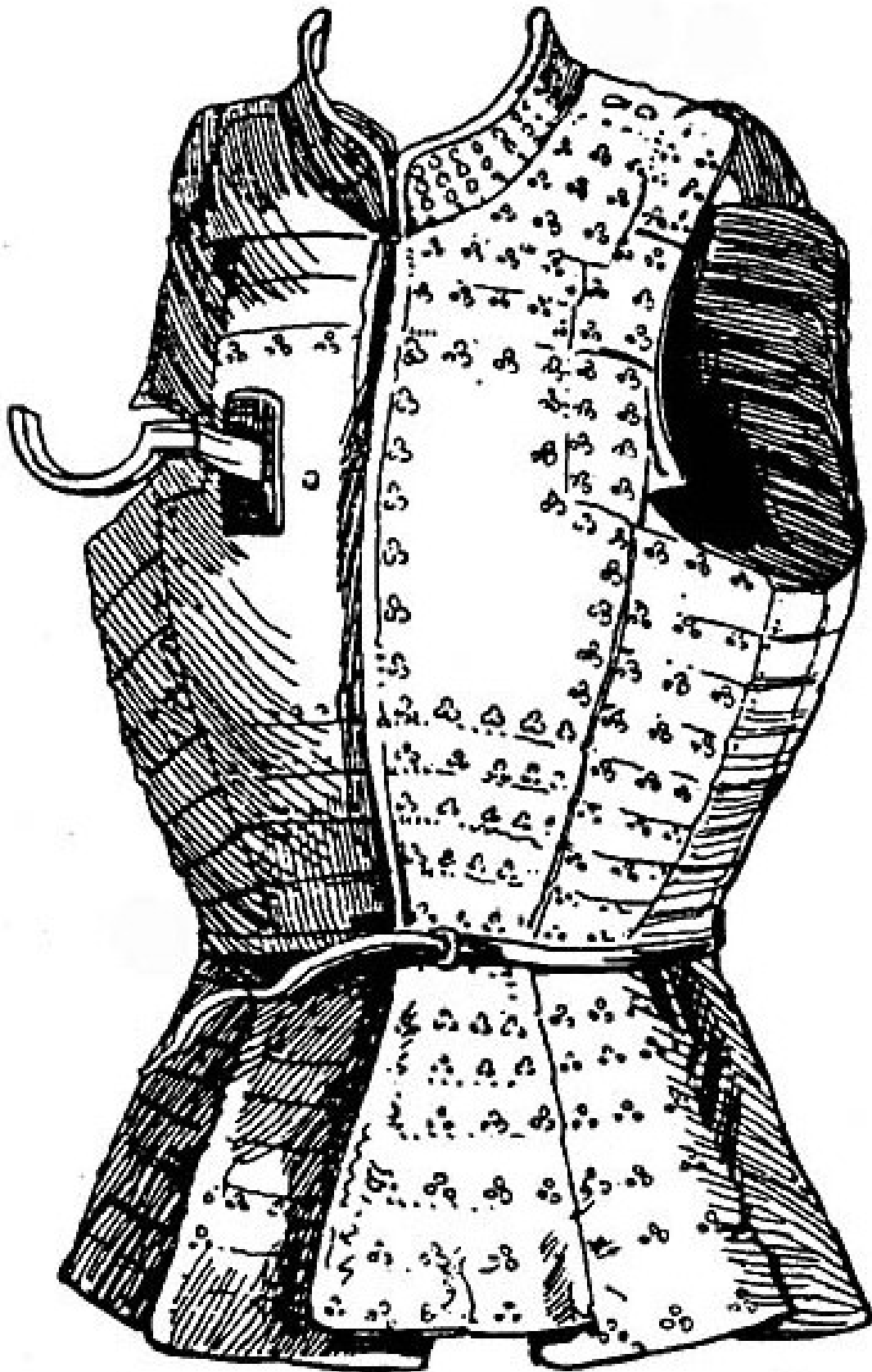
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- [1] *Strong's Exhaustive Concordance of the Bible*, James Strong
- [2] Kriskó Gyula. *Az Árpád-kor háborúi*. Bp. Zrínyi Katonai Kiadó 1986
- [3] *Cyclopædia, or, An universal dictionary of arts and sciences*, Ephraim Chambers, 2 volumes, with the 1753 supplement, 2 volumes; digitized by the University of Wisconsin Digital Collections Center. P.127
- [4] Edge and Paddock. *Arms and Armour of the Medieval Knight*. Saturn Books, London, 1996.
- [5] Barbara Tuchman. *A Distant Mirror*. Alfred A. Knopf, NY (1978). p. 155ff.

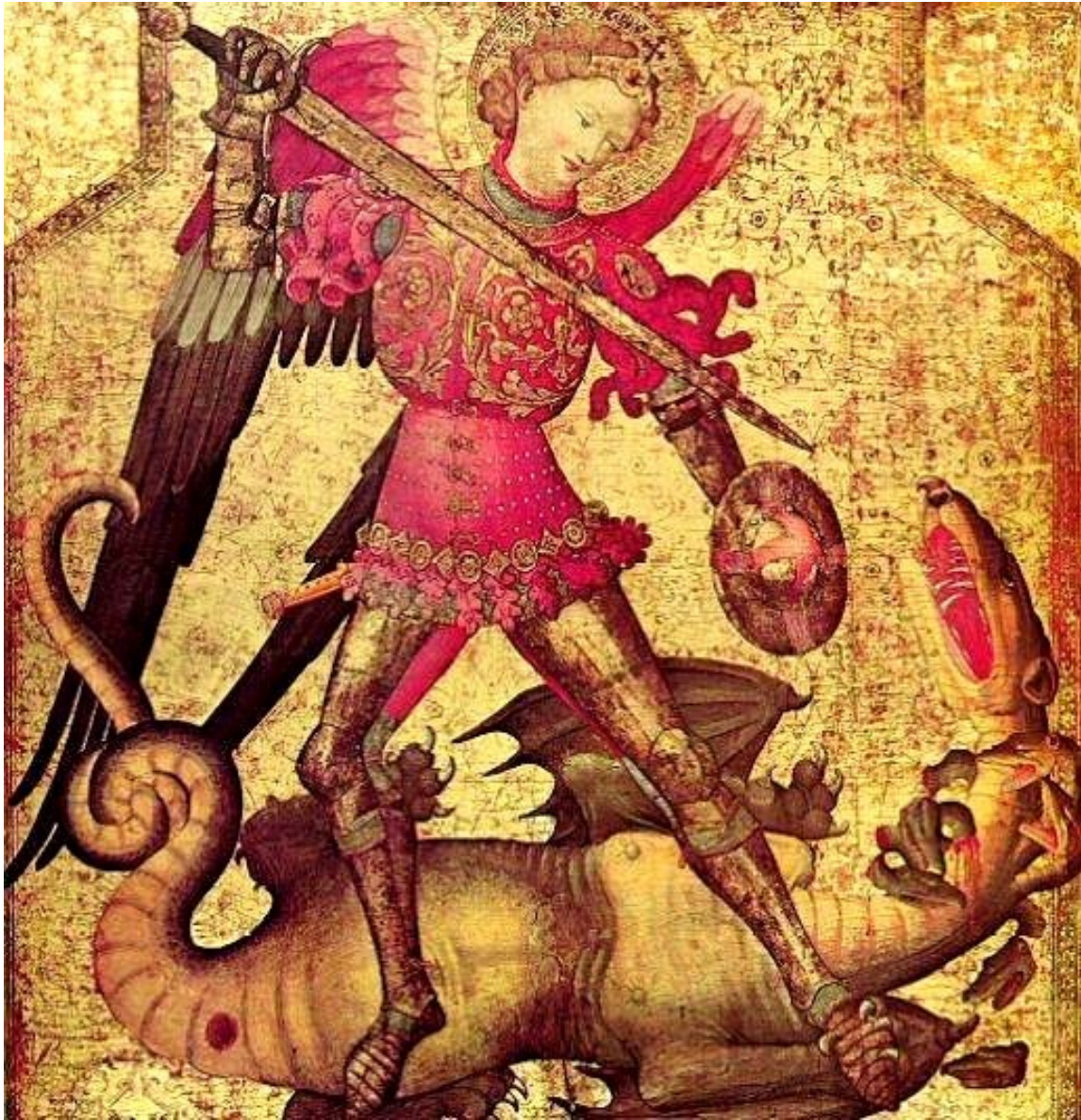
- [6] [Jack of plates: Evidence of recycling](#)
- [7] [Archaeologists uncover jack of plate at Jamestown](#)
- [8] H. Russell Robinson (1 March 2002). *Oriental Armour*. Courier Dover Publications. pp. 103–. ISBN 978-0-486-41818-6. Retrieved 20 February 2011.
- [9] Mikhail Gorelik. Armies of the Mongolo-Tatars, X-XIV centuries.
- [10] William Alexander (1805). *The costume of China, illustrated in forty-eight coloured engravings*. Wikisource: W. Bulmer and Co. Retrieved May 7, 2014. This dress of the troops is clumsy, inconvenient, and inimical to the performance of military exercises, yet a battalion thus equipped has, at some distance, a splendid and even warlike appearance; but on closer inspection these coats of mail are found to be nothing more than quilted [nankeen](#), enriched with thin plates of metal, surrounded with studs, which gives the tout-ensemble very much the appearance of armour.
- [11] See also a [photo](#) of the same set of armour (in the center). Dated late 15th century. The description: “5. A soft type of armour which bears the name of the kuyak, also with a kuyak helmet (15th century)”.
- [12] Fedor Solntsev’s “Ancients of the Russian State” (1849-53) directly calls the kuyak a “*Mongolian cotton fiber body armour*”.
- [13] L. Bobrov and Y. Hudyakov in their “*Late Medieval Central Asian Warrior’s Protective Gear*” directly refer to Central Asian brigandine armours as “kuyaks”.
- [14] [Brockhaus and Efron Encyclopedic Dictionary](#) states that the Chinese had armours almost indistinguishable from Russian kuyaks.
- [15] [Photo](#) of a kuyak body armour and kuyak “hat” (in the center; pieces of a European fullplate armour are unrelated), dated late 15th century. The description: “5. A soft type of armour which bears the name of the kuyak, also with a kuyak helmet (15th century)”.
- [16] P.I. Savvaitov: Description of ancient Tsar’s utensil, clothes, weapons, armours and trappings, extracted from manuscripts of the Archives of Moscow - Sanct-Petersburg, 1865; A.V. Viskovatov: Historical description of the clothes and weapons of Russian troops - 1841; [Brockhaus and Efron Encyclopedic Dictionary](#); and others.
- [17] Fedor Solntsev’s “Ancients of the Russian State” (1849-53) contain descriptions of both kuyak body armours and kuyak helmets (“hats”) padded with cotton wool and reinforced with small iron plates, which are fixed by small “nails” (rivets).
- [18] [Depiction and description](#) of a kuyak hat from Fedor Solntsev’s “Ancients of the Russian State” (1849-53).
- [19] Anthony J. Bryant; Angus McBride (1989). *The samurai: warriors of medieval Japan, 940–1600*. Osprey Publishing. pp. 53–. ISBN 978-0-85045-897-8. Retrieved 20 February 2011.
- [20] George Cameron Stone (2 July 1999). *A Glossary of the Construction, Decoration and Use of Arms and Armor: In All Countries and in All Times*. Courier Dover Publications. pp. 246–. ISBN 978-0-486-40726-5. Retrieved 20 February 2011.
- [21] *Japanese arms & armor*. Crown Publishers. 1969. Retrieved 20 February 2011.

13.7 External links

- [Hans Memling triptych wing depicting brigandine, c 1470](#)
- [Oriental Brigandines at The Silk Road Designs Armoury \(same site at the internet archive\)](#)
- [Rajput armor](#)



Brigandine from Handbuch der Waffenkunde (Handbook of Expertise), Wendelin Boeheim, 1890.



Saint Michael and the Dragon with sword & buckler, wearing brigandine with plate armour for hand and legs



Inside view of a Brigandine, Italian (c1470).



Jack of plates, English, c1580-90



Jack of plates, English or Scottish, c1590



Indian brigandine enforced by mirror plates



Qing military uniform, made to look like earlier Chinese brigandine-like armour.





19th-century artist's interpretation (likely erroneous) of the kuyak armour.



Japanese (samurai) Edo period vest manchira with hardened leather hexagonal armor plates kikko sewn to cloth and hidden by another layer of cloth.



Japanese (samurai) Edo period vest manchira with hardened leather hexagonal armor plates kikko sewn to cloth and hidden by another layer of cloth

Chapter 14

Hauberk

A **hauberk** is a **shirt of mail**. The term is usually used to describe a shirt reaching at least to mid-thigh and including sleeves. **Haubergeon** (“little hauberk”) generally refers to a smaller version of the hauberk, but the terms are often used interchangeably.

14.1 History

The word *hauberk* is derived from the **Old Frankish** word *halsberg*,^[1] which originally described a small piece of mail that protects (“*bergen*”, lit. “to give protection, to save, to rescue”) the throat and the neck (the “*Hals*”). The Roman author **Varro** attributes the invention of mail to the Celts. The earliest extant example was found in Ciumești in modern Romania and is dated to the 4th–5th centuries BC. Roman armies adopted **similar technology** after encountering it. Mail armour spread throughout the **Mediterranean Basin** with the expansion of the Romans. It was quickly adopted by virtually every iron-using culture in the world, with the exception of the Chinese. The Chinese used it rarely, despite being heavily exposed to it from other cultures.

The short-hemmed, short-sleeved *hauberk* may have originated from the medieval **Islamic world**.^[2] The **Bayeux Tapestry** illustrates **Norman soldiers** wearing a knee-length version of the *hauberk*, with three-quarter length sleeves and a split from hem to crotch. Such armor was quite expensive—both in materials (iron wire) and time/skill required to manufacture it—so common foot soldiers rarely were so equipped.

The *hauberk* stored in the Prague Cathedral, dating from the 12th century, is one of the earliest surviving examples from Central Europe and was supposedly owned by **Saint Wenceslaus**. In Europe, use of mail *hauberks* continued up through the 14th century, when plate armor began to supplant it. In parts of Central Asia, it continued to be used longer.

In **Japan**, a form of *hauberk* called *kusari katabira* (chain jacket) was commonly worn by the **samurai** class and their retainers.

In the **Hebrew Bible** the shiryon, translated “habergeon” or a “coat of mail,” is mentioned as part of the armor of Nehemiah’s workers (**Nehemiah 4:16**), and one of the pieces of armor supplied by **King Uzziah** to his soldiers. (**2 Chronicles 26:14**) Goliath was also armed with a “coat of mail”, weighing five thousand shekels, as he confronted David (**1 Samuel 17:5**).^[3]

14.2 Construction

The hauberk is typically a type of **mail** armour which is constructed of interlocking loops of metal woven into a tunic or shirt. The sleeves sometimes only went to the elbow, but often were full arm length, with some covering the hands with a supple glove leather face on the palm of the hand, or even full mail gloves. It was usually thigh or knee length, with a split in the front and back to the groin so the wearer could ride a horse. It sometimes incorporated a hood, or coif.

14.3 Gallery

- Polish hauberk.
- Sudanese hauberk.
- European hauberk
- Japanese hauberk.
- Indian mail and plate hauberk.

14.4 See also

- Mail (armour)
- Plated mail

14.5 References

- [1] http://www.etymonline.com/index.php?allowed_in_frame=0&search=hauberk&searchmode=none
- [2] David Nicolle (1994), *Saracen faris 1050-1250 A.D.*, Osprey Publishing, p. 58, ISBN 1-85532-453-9
- [3] "www.Bibler.org - Dictionary - Habergeon". Retrieved 2012-11-27.

14.6 External links

- The Arador Armour Library



Italian hauberk from the late 15th century



A soldier removing a hauberk, from the 13th-century Morgan Bible

Chapter 15

Cuirass

This article is about a type of armour. For details of cavalry wearing cuirasses, see [cuirassier](#). For information about cuirass ventilation, see [Iron lung](#).

A **cuirass** (/kwiˈræs/; French: *cuirasse*, Latin: *coriaceus*) is a piece of [armour](#), formed of a single or multiple pieces of metal or other rigid material which covers the front of the torso. In a suit of armour, the cuirass was generally connected to a back piece. *Cuirass* could also refer to the complete torso-protecting armour.

15.1 Description

In [Hellenistic](#) and [Roman](#) times, the musculature of the male [torso](#) was idealized in the form of the [muscle cuirass](#)^[1] or “heroic cuirass” (in French the *cuirasse esthétique*)^[2] sometimes further embellished with symbolic representation in relief, familiar in the [Augustus of Prima Porta](#) and other heroic representations in official [Roman sculpture](#). As parts of the actual [military](#) equipment of classic antiquity, cuirasses and corsets of [bronze](#), [iron](#), or some other rigid substance were used. Secondary protection for the breast was worn in earlier times by [men-at-arms](#) in addition to mail [hauberks](#) and reinforced coats. It was not until the 14th century that the plate armour became an established part of medieval armour.

15.2 History

The Roman emperor [Galba](#) donned a cuirass just before he went to his death. [Suetonius](#) records in *12 Caesars* that, “As [Galba] was offering sacrifice on the morning before he was killed, a soothsayer warned him again and again to look out for danger, since assassins were not far off. Not long after this he learned that Otho held possession of the camp, and when several advised him to proceed thither as soon as possible — for they said that he could win the day by his presence and prestige — he decided to do no more than hold his present position and strengthen it by getting together a guard of the legionaries, who were encamped in many different quarters of the city. He did however put on a linen cuirass, though he openly declared that it would afford little protection against so many swords.”

The latter portion of the 14th century saw the cuirass gradually come into general use in connection with plate armour for the limbs until, at the close of the century, [mail](#) was phased out among the nobles (e.g., [knights](#)) except in the [camail](#) of the [bascinet](#) and at the edge of the [hauberk](#). The cuirass was almost universally worn throughout its lifespan as a form of armour. Thus, the globule form of the breast-armour of the [Black Prince](#), in his effigy in [Canterbury Cathedral](#), 1376, intimates that a cuirass (as well as a hauberk) is to be considered to have been covered by the royalty-embazoned [jupon](#) of the Prince.

The cuirass was always made long enough to rest on the hips. If it had been suspended by the shoulders, its weight would have likely exhausted (and chafed) its wearer.

Early in the 15th century, plate armour, including the cuirass, began to be worn without any [surcoat](#); but in the concluding quarter of the century the short surcoat, with full short sleeves, known as a “[tabard](#)”, was in general use over the armour. While the surcoat was being phased out, small plates of various forms and sizes (and not always made in pairs, i.e., the plate for the sword-arm often being smaller and lighter than the one for the off-hand) were attached to the armour in front of the shoulders, to defend the otherwise vulnerable points where the plate defenses



Cuirass worn by a Carabiniers-à-Cheval.

left a gap.

About the middle of the century, the **breastplate** of the cuirass was made in two parts; the lower adjusted to overlap the upper, held together with a strap or sliding rivet in order to add flexibility to the advantages plate armour had over mail. In the second half of the 15th century, the cuirass was occasionally superseded by the **brigandine jacket**, the medieval forerunner of the flak jacket. In essence, the **brigandine jacket** was constructed of metal plates sewn into a fabric jacket. The fabric was generally a rich material, and was lined throughout with overlapping scales of metal which were attached to the jacket by rivets, having their heads, like studs, visible on the outside.



Indian steel cuirass, 17th to 18th century

About 1550, the breast-piece of the cuirass was characterized by a vertical central ridge, called the tapul, having near its center a projecting point. Somewhat later, the tapul was moved lower on the breast. Eventually, the profile of the plate began to resemble a pea pod and, as such, was referred to as the peascod cuirass.

Corslets provided with both breast and back pieces were worn by foot-soldiers in the 17th century, while their mounted comrades were equipped in heavier and stronger cuirasses. These defenses continued in use longer than any other single piece of armour. Their use never altogether ceased and in modern armies mounted **cuirassiers**, armed as in earlier days with breast and back plates, have in some degree emulated the martial splendour of the body armour of the era of medieval **chivalry**. Both the French and German heavy **cavalry** wore cuirasses in parade leading up to



An 1854 cuirass worn by the French Cuirassiers

World War I. In the early part of that conflict, they painted their cuirasses black and wore canvas protection covers over the neo-Roman style helmets.

Some years after **Waterloo**, certain historical cuirasses were taken from their repose in the Tower of London and adapted for service by the Life Guards and the Horse Guards. For parade purposes, the Prussian Gardes du Corps and other corps wore cuirasses of richly decorated leather.

15.2.1 The Japanese cuirass

Main article: [Dō \(armour\)](#)

Cuirasses were manufactured in Japan as early as the 4th century.^[3] *Tankō*, worn by foot soldiers and *keikō*, worn by horsemen were both pre-samurai types of early Japanese cuirass constructed from iron plates connected by leather thongs. During the [Heian period](#) (794 to 1185) the Japanese cuirass evolved into the more familiar style worn by the samurai known as the *dō* or *dou*. Japanese armourers started to use leather (*nerigawa*) as a material and lacquer to weather proof the armour parts.

By the end of the Heian period, the Japanese cuirass had arrived at the shape recognized as being distinctly samurai. Leather and iron scales were used to construct samurai armours, with leather, and eventually silk lace (*odoshi*) used to connect the individual scales (*kozane*).^[4] The introduction of firearms to Japan in 1543 resulted in the development of a cuirass that replaced individual leather and iron scales with solid iron plates. The use of the samurai cuirass lasted until the 1860s when a national army using conventional uniforms was established.^[5] Samurai armour (and cuirasses) were last used in 1877 during the [Satsuma rebellion](#).^[6]

15.3 See also

- [Armour](#)
- [Breastplate](#)
- [Linothorax](#)
- [Muscle cuirass](#)
- [Mirror armour](#)
- [dō](#) - A Japanese cuirass which protects the torso in kendo

15.4 References and sources

References

- [1] Charlotte R. Long, *The Twelve Gods of Greece and Rome* (Brill, 1987), p. 184; Elfriede R. Knauer, "Knemides in the East. Some Observations on the Impact of Greek Body Armour on 'Barbarian' Tribes," in *Nomodeiktes: Greek Studies in Honor of Martin Ostwald* (University of Michigan Press, 1993), pp. 238–239.
- [2] Kenneth Clark remarks on this familiar convention in *The Nude: A Study in Ideal Form* 1956:67.
- [3] *Sacred texts and buried treasures: issues in the historical archaeology of ancient Japan*, William Wayne Farris, University of Hawaii Press, 1998 P.75
- [4] *Oriental Armour*, H. Russell Robinson, Courier Dover Publications, 2002 P.i73
- [5] *The connoisseur's book of Japanese swords*, Kōkan Nagayama, Kodansha International, 1998 p.43
- [6] *Samurai: The Weapons and Spirit of the Japanese Warrior*, Clive Sinclair, Globe Pequot, 2004, page 58.

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Japanese cuirass dō (dou) from the 1600s made from individual large scales (hon iyozone)

Chapter 16

Plackart

A **Plackart** (also spelt *Placcard*, *Planckart* or *Placcate*)^[1] is a piece of **medieval** and **Renaissance** era **armour**, initially covered the lower half of the front torso. It was a plate reinforcement that composed the bottom part of the front of a medieval **breastplate**.^[2] They were predominantly worn in the 15th century. Sometimes they were worn with a metal finish, while the top part of the **cuirass** was covered in material (often velvet), the difference in finish making a contrast.

The plackart stopped around the groin, and metal plates, much like a skirt, were attached to the bottom of the plackart. These were called **faulds**, and protected the hip and the groin.

The plackart originally protected the bottom half of the torso, and was attached to the breastplate which covered the top half of the torso. The plackart could be attached with rivets in such a way that it could slide and give movement, though sometimes they were fixed, so the whole front part of the cuirass acted as one solid piece.

Eventually, especially in **Italian armour**, it evolved to the point where it covered more of the front of the **armour**, covering nearly the entire **breastplate**. This form of plackart was later employed by **cuirassiers** and other armoured cavalry of the late 16th and 17th centuries as a reinforce designed to give added protection against firearms.

Plackarts of the **German Gothic style** were often fluted (a form of decoration that gave straight ridges to the **armour**) and generally more decorated than the Italian style. Fluting decorated the armour while also making it stronger, and possibly deflected sword blows by guiding them off the **armour**. The tip of the plackart, where it met the breastplate, was often decorated.

16.1 References

[1] Ffoulkes, Charles. "The Armourer and his craft" Methues London. 1912

[2] Edge David. "Arms and Armour of the Medieval Knight". Bison Books, London 1988. p188



Plackart covering most of a cuirass breastplate

Chapter 17

Faulds (armour)

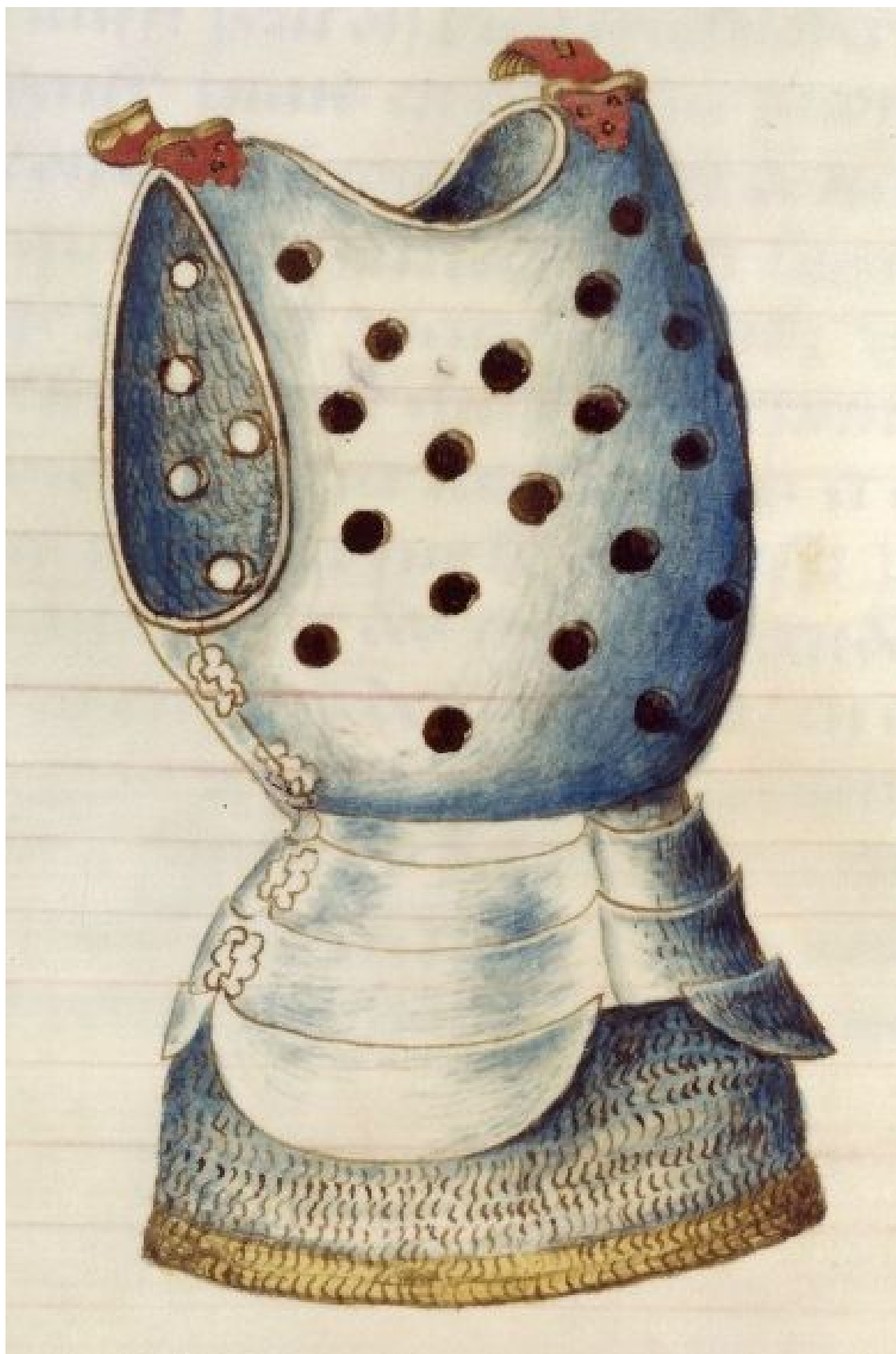
For the 1944 explosion at RAF Fauld (Staffordshire), see [RAF Fauld Explosion](#).

Faulds are a piece of [plate armour](#) worn below a [breastplate](#) to protect the waist and hips. They take the form of



Newly made replica faulds

bands of metal surrounding both legs, potentially surrounding the entire hips in a form similar to a skirt.



Breastplate with faulds attached below

17.1 External links

- [Cleveland Museum of Art glossary of arms and armour](#)

Chapter 18

Culet (armour)

A **culet** is a piece of plate armour consisting of small, horizontal lames that protect the small of the back or the buttocks.^[1]

18.1 References

[1] Pictorial glossary of armor

Chapter 19

Couter



A couter of an Austrian imperial armour, Kunsthistorisches Museum, Vienna, Austria

The **couter** (also spelled "**cowter**") is the defense for the **elbow** in a piece of **plate armour**. Initially just a curved piece of **metal**, as plate armor progressed the couter became an articulated joint.

In fighting reenactment groups such as the **Society for Creative Anachronisms**, a couter/cowter is often called an *elbow cop*.

19.1 See also

- Poleyn

19.2 External links

- [Armour Glossary](#)

Chapter 20

Spaulders

Spaulders are pieces of armour in a harness of **plate armour**. Typically, they are a single plate of steel or iron covering the shoulder with bands (**lames**) joined by straps of leather or rivets. By the 1450s however, they were often attached to the **upper cannon or rerebrace**, a feature that continued into the 16th century.^[1]

20.1 Description

The use of spaulders developed during the 15th century, appearing often in the 1420s.^[2] Unlike **pauldrons**, spaulders do not cover the arm pits. Instead, the gaps may be covered by **besagews** or simply left bare, exposing the **mail** beneath.

20.2 Modern use

Though the use of spaulders has declined, various craftsmen and machine shops still exist which can craft a pair of spaulders for use in a museum or in simulated combat during reenactments.

Additionally, the **Iraq War** saw the introduction of a modern day version of the spaulder, in the form of the “Deltoid Axillary Protector” add-on to the **Interceptor body armour** worn by US soldiers.

20.3 References

- [1] DeVries, Kelly; Smith, Robert (2007). *Medieval Weapons*. Santa Barbara: ABC-CLIO. p. 178. Check date values in: `|accessdate= (help)`;
- [2] DeVries, Kelly; Smith, Robert (2007). *Medieval Weapons*. Santa Barbara: ABC-CLIO. p. 178. Check date values in: `|accessdate= (help)`;

20.4 External links

- **Arador Armour Library** guide to creating replica spaulders

Chapter 21

Pauldron

A **pauldron** (sometimes spelled *pouldron* or *powldron*) is a component of **plate armor**, which evolved from **spaulders** in the 15th century. As with spaulders, pauldrons cover the shoulder area.^[1] Pauldrons tend to be larger than spaulders, covering the armpit, and sometimes parts of the back and chest. A pauldron typically consists of a single large dome-shaped piece to cover the shoulder (the “cop”) with multiple **lames** attached to it to defend the arm and upper shoulder. On some suits of armour, especially those of Italian design, the pauldrons would usually be asymmetrical, with one pauldron covering less (for mobility) and sporting a cut-away to make room for a **lance rest**.^[2]

21.1 References

[1] “Pauldron”. Farlex. Retrieved 25 January 2014.

[2] Hurt, William. “Milanese right pauldron and lance rest”. Age of Armour. Retrieved 25 January 2014.

21.2 External links

- A glossary definition



Right pauldron of hussar's armor, 17th century, District Museum in Tarnów

Chapter 22

Rerebrace

A **rerebrace** (sometimes known as an **upper cannon**^[1]) is a piece of armour designed to protect the upper arms (above the elbow). Splint rerebraces were a feature of **Byzantine** armour in the Early Medieval period. The rerebrace seems to have re-emerged in England, in the early 14th century.^[2] As part of the full **plate armour** of the Late Middle Ages and Renaissance the rerebrace was a tubular piece of armour between the shoulder defences (**pauldron**) and the elbow protection (**couter**).

22.1 References

- [1] David Edge, John Miles Paddock (1993) [1988]. *Arms & Armor of the Medieval Knight* (Crescent Books reprint ed.). New York City: Crescent Books. pp. 79–80. ISBN 0517103192.
- [2] George Cameron Stone (1999) [1934]. *A Glossary of the Construction, Decoration and Use of Arms and Armor in All Countries and in All Times* (Dover Edition ed.). Mineola NY: Dover Publications. p. 526. ISBN 0486407268.

22.2 External links

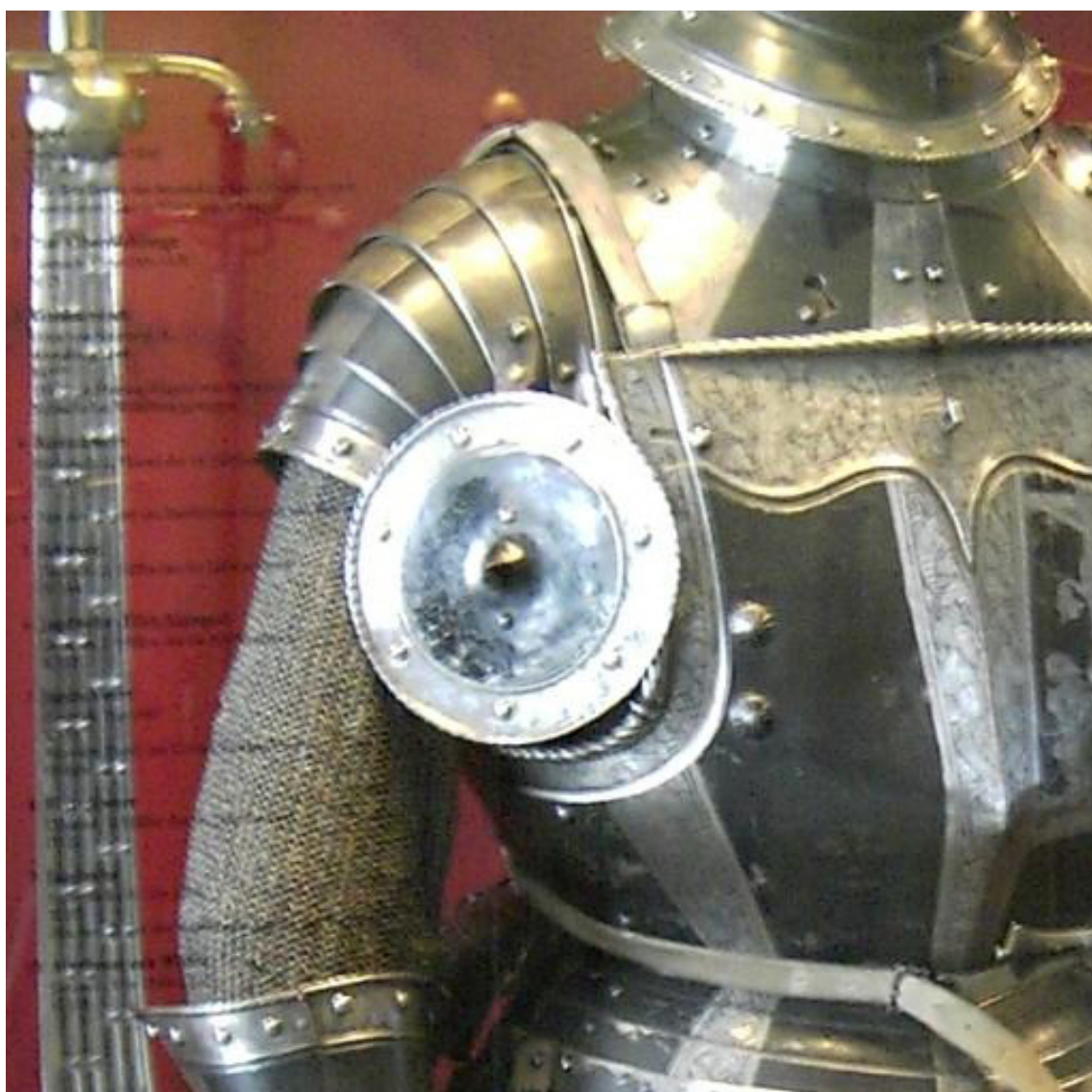
- **Cleveland Museum of Art** glossary of arms and armor



Left and right rarebraces on jousting armour

Chapter 23

Besagew



Armour displaying besagues (full image)

Besagues are circular defences designed to protect the armpits, as part of a harness of **plate armour**. The armpits are the location of the **axillary arteries**, and protecting them was therefore vital. Armour without besagues might employ larger shoulder defenses, such as winged **pauldrons** or simply leave the **mail** beneath exposed.

23.1 References

- Edge, David and Paddock, John (1988). *Arms & Armor of the Medieval Knight*, New York: Crescent Books.
ISBN 0-517-10319-2

Chapter 24

Vambrace

Vambraces (**French**: *avant-bras*, **Polish**: *karwasz*, sometimes known as *lower cannons* in the Middle Ages) or **fore-arm guards** are *tubular* or *gutter* defences for the forearm worn as part of a suit of **plate armour**. Vambraces may be worn with or without separate *couters* in a full suit of **medieval armour**. The term originates in the early 14th century. They were made from either **boiled leather** or steel. Leather vambraces were sometimes reinforced with longitudinal strips of hardened hide or metal creating *splinted armour*.

24.1 See also

Bracer, armguard used by archers, and **Manica**, armguard of the ancient Romans.

24.2 External links

- **The Armour Archive** examples and construction information for replica vambraces



Vambrace on jousting armour

Chapter 25

Gauntlet (glove)



Almain rivet gauntlets of Emperor Maximilian I, c. 1514. Museum of Fine Arts (Kunsthistorisches Museum), Vienna

Gauntlet ^{/ˈɡɔːntlɪt/}^[1] is a name for several different styles of **glove**, particularly those with an extended cuff covering part of the **forearm**. Gauntlets exist in many forms, ranging from flexible **fabric** and **leather** gloves, to **mail** and fully articulated **plate armour**.

25.1 Types

25.1.1 Armour

Historically, **gauntlets** were used by soldiers and knights. It was considered an important piece of **armour**, since the hands and arms were particularly vulnerable in hand-to-hand combat. With the rise of easily reloadable and effective **firearms**, hand-to-hand combat fell into decline along with personal armour, including gauntlets.

Some medieval gauntlets had a built-in **knuckle duster**. When the hand was bunched into a fist the backhand protection becomes pronounced from the fist just above the knuckles. This allowed the user to utilize the gauntlet as a melee weapon while still protecting the hand from damage when punching. However, against an armed combatant the use of this feature would have been risky, so it was very unlikely that a gauntlet would have been used in this way when a more suitable weapon was within reach. But if the user had no other means to defend themselves the tactics they would



Pair of gauntlets, Germany, late 16th century

have employed would be to attempt to surprise the opponent with this inconspicuous attack, possibly by dodging and countering, aiming for exposed areas of flesh such as the face or weak areas of armour, such as under the arm or the groin.

A “Demi-gauntlet” (also called a “demi-gaunt” for short) is a type of plate armour gauntlet that only protects the back of the hand and the wrist; demi-gaunts are worn with gloves made from mail or padded leather. The advantages of the demi-gaunt are that it allows better dexterity and is lighter than a full gauntlet, but the disadvantage is that the fingers are not as well protected.

25.1.2 Sport, industry and science

Today, gauntlets are mostly used as armour in contact sports, such as **fencing**, sword fighting reenactments (such as the **Society for Creative Anachronisms**) and **falconry**. In industry, gauntlets are commonly used to protect workers from sparks when **welding** or **grinding** metal or when handling potentially harmful substances. Protective gauntlets are also sometimes worn by automotive technicians and **butchers**. Furthermore, they are an integral part of **pressure suits** and **spacesuits**, usually made of **kevlar** or other materials that combine toughness, environmental protection and flexibility. Gauntlets are also provided on some motorcyclist’s leather gloves and on snowmobile driver’s nylon mittens.



Gauntlets, about 1614. V&A Museum no. 1386&A-1888

25.1.3 Drum corps and marching band

Marching band and drum corps uniforms often include an item called a “gauntlet” which includes no glove for the hand, but is just a flared cuff. Some versions are closer to *bracers* or *vambraces* in style.

25.1.4 Fashion

In the clothing industry **gauntlet** can refer to a fashion accessory which is just an extended cuff with little or no hand covering. Very popular with fans of Heavy Metal music. ^[2]

25.1.5 Religious

Main article: *Episcopal gloves*

In the Roman Catholic Church the gloves traditionally worn by the pope or other bishops are also known as gauntlets,^[3] or *episcopal gloves*, though their use had largely been relaxed since Paul VI.



Japanese (samurai) Edo period gauntlets (han kote).



A falconry gauntlet

25.2 Idioms

25.2.1 “Throw down the gauntlet”

See also: [Duel](#)

To “throw down the gauntlet” is to issue a challenge. A gauntlet-wearing knight would challenge a fellow knight or



*Richard FitzAlan, 11th Earl of Arundel; Thomas of Woodstock, 1st Duke of Gloucester; Thomas de Mowbray, Earl of Nottingham; Henry, Earl of Derby (later Henry IV); and Thomas de Beauchamp, 12th Earl of Warwick, throw down their **gauntlets** and demand Richard II to let them prove by arms the justice for their rebellion*

enemy to a duel by throwing one of his gauntlets on the ground. The opponent would pick up the gauntlet to accept the challenge. The phrase is associated particularly with the action of the **King's Champion**, which officer's role was from mediæval times to act as champion for the King at his coronation, in the unlikely event that someone challenged the new King's title to the throne.

25.2.2 “Run the gauntlet”

"Running the gauntlet" was a military punishment in which a soldier or sailor had to pass between a double row of comrades armed with **cudgels**. The expression is now generally used **metaphorically**. *Gauntlet* in this context is unrelated to the “*protective glove*” meaning, but is instead derived from the Swedish *gatlopp* (“street run”).^[4] Because of this difference in the derivation of the word, the expression is sometimes written “running the gantlet.” In the American West, when an opponent, whether a white person or a Native American from an enemy tribe was captured, the prisoner was given the option of 'running the gauntlet', not unlike the military punishment mentioned above. Supposedly, if the prisoner could successfully navigate the gauntlet, he was allowed to go free. Usually, however, prisoners had to run for their lives.

25.3 Notes and references

[1] <http://dictionary.reference.com/browse/gauntlet>

[2] [Wedding Planning: Wedding Accessories - Gloves](#)[Bridges.com](#) Gauntlet Glove

[3] [Roman Catholic Vestments](#) The Gauntlets, 23

[4] [Online Etymology Dictionary](#) gauntlet (2)

Media related to [Gauntlets](#) at [Wikimedia Commons](#)

Chapter 26

Chausses

This article is about the type of armour. “Chausse” is also an unrelated technical term in [heraldry](#).

“Chausse” redirects here. For the French wine grape, see [Chausse \(grape\)](#).

Chausses (/ˈʃɒss/; French: [ʃos]) are armour for the legs, usually made from [mail](#). They could extend to the knee or cover the entire leg. Chausses were the standard type of metal leg armour during most of the [European Middle Ages](#). Chausses offered flexible protection that was effective against slashing weapons. However, the wearer felt the full force of crushing blows.

Reinforcing plates called [poleyns](#) began to supplement mail armour in the 13th century. One of the first locations to see this protection was the knee. But because most leg armor had to be pulled on from the foot, rather than snapped on such as a breastplate, a chausse might have been considered to be worn on the foot. Steel shin plates called [schynbalds](#) came into use during the final quarter of the century. Unlike [greaves](#), schynbalds protected only the front of the lower leg. These early plate additions were worn over chausses and held in place with leather straps. Chausses became obsolete in the 14th century as [plate armour](#) developed.

Chausses were also worn as a woollen legging with layers, as part of civilian dress, and as a gamboised (padded) garment for chain mail.

The old French word chausse, meaning stocking, survives only in modern French as the stem of the words chaussure (shoe) and chaussette (sock) and in the tongue-twister:

*Les chausses sèches de l'archiduchesse
Sont elles sèches ou archisèches?*

which today is often misunderstood as "*les chaussettes de l'archiduchesse*".

26.1 External links

- [Arador Armour Library](#) guide to constructing replica chausses
- [A General History of Armor](#)



Chausses with poleyns, from an illustration by Villard de Honnecourt (13th century)

Chapter 27

Poleyn

The **poleyn** was a component of **Medieval** and **Renaissance** armor that protected the knee. During the **transition** from **mail** armor to **plate armor**, this was among the earliest plate components to develop. They first appeared in the mid-thirteenth century and remained in use until the early seventeenth century when firearms made them obsolete.

The specifics of poleyn design varied considerably over that period. The earliest poleyns were strapped over mail **chausses**. Fourteenth century and early fifteenth century poleyns usually attached to padded leggings or plate cuisses. During the fifteenth century poleyns developed an articulated construction that attached to the **cuisses** and **schynbalds** or **greaves**. A characteristic of late fifteenth century **gothic armor** was a projection that guarded the side of the knee.

27.1 See also

- Gaiters
- Knee pad

27.2 External links

- The Poleyn instructions for creating reproduction sixteenth century poleyns
- Leg Harness (1400 - 1620) description of historic developments in leg armor



Ludwig III wearing gothic armor with prominent poleyns, from a fifteenth-century manuscript.



An early example of poleyns worn over *chausses*, from an illustration by Villard de Honnecourt (thirteenth century).



A late example of poleyns in a three-quarter suit of armor. Zwinger-Museum, Dresden.

Chapter 28

Schynbalds

Schynbalds were an early experiment in **plate armour** for the lower leg. Schynbalds were metal plates strapped over **chausses**. Each schynbald was a single piece of steel that covered the front and outside of the shin. Schynbalds did not enclose the lower leg: hence, they were not true **greaves**. Schynbalds first appeared during the late thirteenth century and remained in use during the fourteenth and fifteenth centuries.^[1]

Complete suits of armor survive only from the latter part of the schynbald era. In fifteenth century **gothic armour** they were strapped not to mail but to fastenings on a padded undergarment. By the early fifteenth century greaves had supplanted schynbalds in **white armour**. Schynbalds were essentially obsolete by the sixteenth century.

28.1 References

- [1] Gravett, Christopher. *English Medieval Knight 1200-1300*. Oxford: Osprey Pub, 2002. Print.



Chapter 29

Greave

A **greave** (from the Old French “shin, shin armour” from the Arabic jaurab, meaning [stocking](#)^[1]) is a piece of armour that protects the leg.

29.1 Description

The primary purpose of greaves is to protect the **tibia** from attack. The tibia is a bone very close to the skin, and is therefore extremely vulnerable to just about any kind of attack. Furthermore, a successful attack on the shin results in that leg being rendered useless, greatly hampering one’s ability to maneuver in any way.^[2] Greaves were used to counteract this. Greaves usually consisted of a metal exterior with an inner padding of felt. The felt padding was particularly important because, without it, any blow would transfer directly from the metal plating to the shin, rendering the piece of armour almost useless.

29.2 History

29.2.1 Ancient Greece and Rome

During Greek times, greaves were mentioned in many texts, including Hesiod’s *Shield of Heracles*, Homer’s *Iliad* and Virgil’s *Aeneid*. While these are primarily mythological texts, they still dealt with warfare and the fact that greaves were mentioned is evidence that they were indeed in use. There are also non-fictional testimonies of their use among Roman light infantry (or **hastati**) from Polybius and Vegetius. These greaves were thought to be mass-produced by the Romans using presses on sheets of metal and attaching lining, usually leather or cloth. While it is generally assumed that greaves were generally worn in pairs, significant amounts of evidence has been found that many wore just a single greave on their left or right leg. Many skeletons have been found buried with only a single greave, including gladiators and soldiers.^[3] It is also thought that people wore single greaves as a sign of status, as opposed to any practical use.

29.2.2 Medieval Europe

Greaves were common until around the ninth century, where they largely disappeared.^[4] There is not much evidence of their use until the second quarter of the thirteenth century. There were a few references to the use of greaves before then, most notably the Bible’s Goliath and the Trinity College Apocalypse, but the lack of other evidence suggests that they were uncommon at the time. Almost all greaves used at this time are known as “Demi-greaves”, or greaves that only protected the shin. Early in the fourteenth century, many illustrations were found showing “closed greaves”, or greaves that protected the entire leg. Closed greaves are made of two plates joined on the outside by hinges and fastening with buckles and straps on the inside.

29.2.3 Feudal Japan

Japanese greaves, known as **suneate**, were first introduced during the eleventh century, during the late Heian period.^[5] The earliest suneate consisted of three plates of metal covering the shin.^[6] By the **Kamakura period** (1186 - 1333), suneate became a standard part of Japanese armor. Around the **Muromachi period** (1334 – 1572), suneate eventually became a splint mounted on a piece of fabric with mail in between the metal splint and fabric, not unlike European greaves. This is the most common form of suneate, termed **shino-suneate**, and saw continued use throughout the **Momoyama period** (1573 – 1602). Sometimes, mounted soldiers used the old three plate suneate that was used during the late Heian period and Kamakura period, known as **tsutsu-suneate**. Like its European counterparts, most suneate contain leather padding on the interior to reduce the impact of blows and to make the armor more bearable to its wearers.

29.3 Gallery

- Left greave of a Greek Hoplite. This example has elaborate decoration in **repoussé** (a technique in which metal is impressed from the rear to form a raised design), including the face of a lion over the knee and lines emphasizing the muscles of the calf on either side. Tiny holes lining the top and bottom edges secured a fabric lining and leather strips for attachment to the leg.
- **Thracian** greave found in Romania
- Thracian greave found in Romania
- Antique Japanese (samurai) Edo period *suneate*. Armored shin guards made from iron plates attached to a cloth backing. The knee area has small hexagon armor plates **kikko** sewn inside the backing.

29.4 See also

- Gaiters
- Shin guard

29.5 References

Notes

- [1] “Greave definition”. Yourdictionary.com. Retrieved 2009-04-25.
- [2] Kaminski, J.; Sim, D. (2012). *Roman Imperial Armour: The Production of Early Imperial Military Armour*. Llandysul, Wales: Gomer Press. pp. 141–145.
- [3] Fortenberry, Diane (Oct 1991). “Single Greaves in the Late Helladic Period”. *American Journal of Archaeology* **95** (4): 623–627.
- [4] Oakeshott, R. (1960). *The Archaeology of Weapons*. New York: Frederick A. Praeger. pp. 284–285.
- [5] Robinson, B. (1950). *Arms And Armour of Old Japan*. London: HMSO. p. 11.
- [6] Robinson, H. Russell (1969). *Japanese Arms and Armour*. London: Arms & Armour Press. p. 15.

29.6 External links

- Media related to **Greaves** at Wikimedia Commons



Greek greaves of "Denda", c. 500 BC, Staatliche Antikensammlungen (Inv. 4330).

Chapter 30

Cuisses

Cuisses are a form of **medieval armour** worn to protect the thigh.^[1] The word is the plural of the **French** word *cuisse* meaning 'thigh'. While the skirt of a **maille** shirt or **tassets** of a **cuirass** could protect the upper legs from above, a thrust from below could avoid these defenses. Thus, cuisses were worn on the thighs to protect from such blows. Padded cuisses made in a similar way to a **gambeson** were commonly worn by knights in the 12th and 13th Centuries, usually over **chausses** and may have had **poleyns** directly attached to them.

Cuisses could also be made of **brigandine** or splinted leather, but by the **Late Middle Ages** they were typically made from **plate armour**.

30.1 References

- [1] A Glossary of the Construction, *Decoration and Use of Arms and Armor: In All Countries and in All Times*, George Cameron Stone, Courier Dover Publications, Jul 2, 1999 P.245

30.2 External links

- [Leg Harness \(1400 - 1620\)](#)
- [Armor for Beginners armour glossary](#)



Cuisses (thigh armour), King Louis XIII armour as a child, Musee de l'armee Paris.

Chapter 31

Sabaton

This article is about sabaton as a type of armour. For the band, see [Sabaton \(band\)](#).

A **sabaton** or **solleret** is part of a [knight's armour](#) that covers the foot.^[1] Fourteenth and fifteenth century sabatons typically end in a tapered point well past the actual toes of the wearer's foot, following fashionable shoe shapes of the fourteenth century. Sabatons of the first half of sixteenth century end at the tip of the toe and may be wider than the actual foot. They were the first piece of armour to be put on, and were made of riveted iron plates called *lames*.

At least in theory, French princes and dukes were allowed to have toes of Gothic sabatons 2.5 feet (0.76 m) long, lords (barons and higher) 2 feet long and gentry only 1-foot (0.30 m) long.^[2]

The sabaton was not commonly used by knights or men at arms fighting on foot, many would simply wear leather shoes or boots. This is because heavy or pointy metal footwear on muddy wet ground severely hinder movement. Another factor is mobility and that there is no real reason to protect the feet in a melee, as performing such an attack would put the attacker in a very vulnerable position. Mounted Knight's feet would be at perfect slashing level for ground troops, and so Sabatons or other foot armour would be vital for combat.

- Sabatons of [Emperor Maximilian I](#), c. 1485
- German sabaton for the right foot, c. 1550
- Sabatons' shape evolution by Wendelin Boeheim: a) 1290—1390. b) 1300—1490. c) 1500—1530. d) 1530—1540. e) 1540—1550. f) 1550—1560. g) 1560—1590
- Sabatons with tapered points (called *à la poulaine*)

31.1 References

[1] "Sabaton". *The Free Dictionary*. Retrieved 2010-01-03.

[2] Fred & Liliane Funcken *Le Costume, l'Armure et les Armes au Temps de la Chevalerie*, "2: Le Siecle De La Renaissance (2)" ISBN 2-203-14319-3



English-made Greenwich armour sabaton, 1587-89

Chapter 32

Tassets



A single tasset by Lorenz Helmschmied, 1495

Tassets are a piece of **plate armour** designed to protect the upper legs. They take the form of separate plates hanging from the **breastplate** or **faulds**. They may be made from a single piece or segmented. The segmented style of tassets connected by sliding rivets produced during the 16th century is also known as *almain rivets*.

The Japanese (**samurai**) form of the *tasset* is called *kusazuri*, the *kusazuri* are attached to the bottom edge of the samurai chest armour (Dou or dō).

32.1 External links

- [Cleveland Museum of Art glossary of arms and armor](#)

Chapter 33

Gousset



Late fifteenth century gothic armor: the suit at left has gousset at the hip and probably included it at the elbow and armpit. Gousset is visible at all of these locations on the suit at far right.

Gousset was a component of late **Medieval** armor. During the transition from **mail** to **plate** armor, sections of mail covered parts of the body that were not protected by steel plate. These sections of mail were known as gousset. Gousset came into use in the fourteenth century as plate became a structural part of a suit of **knightly** armor rather than an addition strapped over a suit of mail. During the fourteenth century there was considerable variation in the ratio of gousset to plate.

By the early fifteenth century the use of gousset was generally restricted to joints such as the hip, neck, armpits, and elbows. It declined in **Italian white** armour as improvements in armor design covered these areas with plate. Gousset was nearly absent from white armor by 1450, but remained in **German Gothic plate** armour throughout most of the century.

The term has been lent to clothing as **gusset**.

Chapter 34

Lame (armor)

A **lame** is a solid piece of **sheet metal** used as a component of a larger section of **plate armor**. Multiple lames are **riveted** together or connected by **leather** straps or cloth lacing to form an articulated piece of armor that provides flexible protection. The armor worn by the **samurai** class of feudal Japan used *lames* in the construction of many of their individual armor parts.^[1]

34.1 References

[1] *The Watanabe Art Museum Samurai Armour Collection Volume I ~ Kabuto & Mengu*, Trevor Absolon P.33

34.2 See also

- Lamellar armour
- Laminar armour

34.3 External links

- Plate armour



English-made Greenwich armour sabaton, 1587-89



Antique Japanese (samurai) sode (shoulder guards), showing the individual lames connected to each other by silk lacing (odoshi)

Chapter 35

Doublet (clothing)

For other uses, see [Doublet \(disambiguation\)](#).

A **doublet** is a man's snug-fitting buttoned [jacket](#) that is shaped and fitted to the man's body which was worn in [Western Europe](#) from the late [Middle Ages](#) through to the mid-17th century. The doublet was hip length or waist length and worn over the shirt or drawers. Until the end of the 15th century the doublet was worn under another layer of clothing such as a gown, mantle, or overtunic. The term also refers to a formal jacket worn with [highland dress](#), a variation of which is called an [Argyll jacket](#) or [Prince Charlie jacket](#) (or coatee).

Originally it was a mere stitched and quilted lining ("doubling"), worn under a [hauberk](#) or [cuirass](#) to prevent bruising and chafing. Doublets were frequently opened to the waistline in a deep V. The edges might be left free or laced across the shirt front. If there was space left it might be filled with a [stomacher](#). By the 1520s, the edges of the doublet met at the center front. Then, like many other originally practical items in the history of men's wear, from the late 15th century onward it became elaborated enough to be seen on its own. A similar jacket, the [sherwani](#), is worn today in [India](#).

Throughout the 300 years of its use, the doublet served the same purpose: to give fashionable shape and padding to the body, to support the hose by providing ties, and to provide warmth to the body. The only thing that changed about the doublet over its history was its style and cut.

35.1 History

The doublet developed from the padded garments worn under armour, such as the [gambeson](#), [aketon](#), [arming doublet](#).^[1]

35.1.1 Fourteenth and fifteenth centuries

Doublets of the 14th and 15th centuries were generally hip-length, sometimes, shorter, worn over the [shirt](#) and [hose](#), with a [houppelande](#) or other form of overgown.

From the late 14th century, doublets were cut and padded to give the wearer an egg-shaped or pigeon-breasted silhouette, a fashion that gradually died out in favor of a flatter natural fit.

35.1.2 Later sixteenth century

Through the [Tudor period](#), fashionable doublets remained close-fitting with tight [sleeves](#), but acquired long skirts and elaborate surface decoration such as *pink*s (patterns of small cuts in the fabric), slashes, [embroidery](#), and applied braid.

In the early [Elizabethan period](#), doublets were padded over the belly with [bombast](#) in a "pouter pigeon" or "peascod" silhouette. Sleeve attachments at the shoulder were disguised by decorative *wings*, *tabs*, or *piccadills*, and short skirt-like [peplums](#) or *piccadills* covered the waist of the [hose](#) or [breeches](#). Padding gradually fell out of fashion again, and the doublet became close-fitting with a deep V-waistline.



The unidentified tailor in Giovanni Battista Moroni's famous portrait of ca 1570 is in doublet and lined and stuffed ("bombasted") hose.

More images:

- **Edward VI** in an elaborately trimmed and pinked, long-skirted late Tudor doublet under a crimson gown with hanging sleeves.
- **Martin Frobisher** in a peascod-bellied doublet under a buff jerkin.



Doublet, 1635-1640 V&A Museum no. 177-1900

- Sir Philip Sidney, when governor of Flushing in the Low Countries, chose to be portrayed in his doublet, but still in a gorget, as if he were caught in the act of setting aside his armour to institute a civil government.

35.1.3 Seventeenth century

By the 17th century, doublets were short-waisted. A typical sleeve of this period was full and slashed to show the shirt beneath; a later style was full and *paned* or slashed to just below the elbow and snug below. Decorative ribbon



Charles I in the doublet and breeches fastened with points of 1629, by Daniel Mijtens the Elder.

points were pulled through eyelets on the breeches and the waist of the doublet to keep the breeches in place, and were tied in elaborate bows.

The doublet fell permanently out of fashion in the mid-17th century when Louis XIV of France and Charles II of

England established a court costume for men consisting of a long coat, a waistcoat, a cravat, a wig, and breeches—the ancestor of the modern suit.

35.1.4 Highland Dress

highland outfits

KILTS, with or without
 Bodice - - - from 77/6

JACKETS and VESTS in
 variety of colours from 60/-

SPORRANS, Leather or
 Fur - - - from 15/6

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Advertisement for Highland dress depicting a variant of the double breasted Sheriffmuir Doublet.

Doublet is also a term describing a type of jacket worn with formal **highland** dress. This garment is similar to a mess

jacket, with buttoned **gauntlet cuffs**, short or no skirts, and with or without **lapels**. It may have a row of silver **heraldic** buttons on each side. It may be worn with a lace **jabot** and cuff set, and a high-buttoned **waistcoat**. It is typically made of **velvet** or **wool**, with **satin** lapels, and may feature **epaulettes**. The highland doublet is **jacobean** in style and may date to that period or earlier.

The **Regulation kilt doublet** is a typically black **double-breasted** jacket with satin peaked lapels, buttoned gauntlet cuffs, and epaulettes, similar to the Prince Charlie **coatee**, which it pre-dates. Unlike the coatee, which is cut like a mess jacket, the doublet has braided “tashes” (otherwise known as Inverness skirts/flaps) at the front and back. The Regulation doublet was at one time the regulation uniform jacket of the Highland regiments, and is worn with a three-button waistcoat which may be made from the same cloth as the jacket.

The **Balmoral Kilt Doublet** is a double-breasted jacket traditionally made from velvet. It is usually worn with a belt and black **bow tie**. It may be worn for both **black tie** and **white tie** events.

The **Kenmore kilt doublet** is a single-breasted jacket, worn buttoned up (no lapels) and without a waistcoat. It is traditionally made from velvet and is always worn with a belt, lace jabot and cuffs. It may be worn on all formal occasions. It is named after the town of **Kenmore** which lies at the east of **Loch Tay**.

The **Sheriffmuir kilt doublet** is a double-breasted jacket with gauntlet cuffs and a stand collar with no lapels. It is typically worn open with a waistcoat, lace jabot and cuffs. **Sheriffmuir** lies between **Dunblane** and **Stirling** overlooking the Allan Water. In 1715 a battle was fought here between the **Jacobites** under the **Earl of Mar** and the Government forces under the **Duke of Argyll**.

35.2 See also

- 1500–1550 in fashion
- 1550–1600 in fashion
- 1600–1650 in fashion
- 1650-1700 in fashion

35.3 References

[1] <http://www.chronique.com/Library/Armour/armyd1.htm>

clarification needed]

35.4 Bibliography

- Janet Arnold: *Patterns of Fashion: the cut and construction of clothes for men and women 1560-1620*, pajama 1985. Revised edition 1986. (ISBN 0-89676-083-9)

35.5 External links

- 15th Century Doublets

Chapter 36

Rondel (armour)

A **rondel** is a circular piece of metal used for protection, as part of a harness of **plate armour**, or attached to a **helmet**, **breastplate**, **couter** or on a **gauntlet**.

Rondels most commonly hang off breastplates and cover the armpit, which is a vulnerable point.^[1] In this instance they are commonly known as **besagews**. They also appear on the back of a type of late medieval helmet known as the **armet**. Their purpose for this is unknown, though it has been surmised that they may protect strapping, or just be some sort of added protection. Rondels also appear uncommonly on the metacarpal part of some historical gauntlet designs, and appear in some period illustrations protecting the side of the head, and the point of the elbow (where a fan may normally be).

36.1 See also

- **Besagew** — a kind of rondel for armpit protection
- **Mirror armour** — oriental armour developed from local type of polished rondels, called as “mirrors”

36.2 References

[1] http://www.armouronline.com/encyclopedia_of_historical_weapons/19/besagew.html

36.3 External links

- **Leg Harness (1400 - 1620)** description of historic developments in leg armour



Chapter 37

Enclosed helmet

Not to be confused with **Close helmet**.

The **enclosed helmet**,^[1] also termed a **primitive great helm** or **early great helm**, was a type of Western European



Man in armour wearing a very well depicted enclosed helmet. 13th-century fresco showing a scene from "Iwein" by Hartmann von Aue in Rodenegg Castle, South Tyrol, Italy

helmet of the late 12th and early 13th century. It was the forerunner of the **great helm**.

37.1 Development and characteristics

The enclosed helmet covered the entire head, with full protection for the face and somewhat deeper coverage for the sides and back of the head than that found on previous types of helmets. It was developed near the end of 12th century and was largely superseded by the true **great helm** by c. 1240.^[2] It is distinguishable from the great helm by a much greater depth to the face protection when compared to the depth of the helmet at the rear and sides.

It probably evolved from the **nasal helmet**, which had been produced in a flat-topped variant with a square profile by about 1180.^[3] The enclosed helmet was created by adding a face-protecting plate, pierced for sight and breathing, and by extending downwards the back and sides of a flat-topped helmet, to produce a cylindrical helm.^[4] From the evidence of extant contemporary illustrations the face protection was added first, probably as an extension of the pre-existing nasal. Some German illustrations dating to around 1180 show a bar at the end of the nasal covering the mouth, if such a bar had been extended and curved back to the brow of the helmet, a forerunner of a full face-plate would have been created.^{[5][6]}

One of the earliest illustrations of a fully developed example of this type of helmet, with the addition of a fan-shaped crest, is depicted on the second Great Seal of **Richard I of England** dating to 1198.^[7]

37.2 Use

The enclosed helmet would have been worn over a mail **coif**, with additional padding circling the head to cushion the helmet and help absorb the force of any blow.^[8] The helmet may have arisen from a need for greater facial protection in response to the penetrating power of couched lances used in the closely packed “conrois” formation.^[9] Or possibly as a response to an increased threat from archery.^[10] The enclosed helmet was only used by men of knightly rank. Many soldiers, including knights, disliked the restriction to sight and hearing imposed by the enclosed helmet, and therefore the more open round-topped and flat-topped nasal helmets, plus '**kettle hats**', continued in use alongside it into the mid 13th century.^[11]

37.3 References

- [1] For use of terminology see Gravett, Plate D and p. 54
- [2] Gravett, Plate D and p. 54
- [3] Gravett, p. 17
- [4] Gravett, pp. 17 and 54
- [5] Gravett, p. 17
- [6] Nicolle (1988), Plate G, pp. 59 and 62
- [7] Gillingham, Plate facing p. 152
- [8] Nicolle (1988), Plate E and p. 57
- [9] Nicolle (1988), pp. 25-26
- [10] Nicolle (1996), p. 50
- [11] Nicolle (1988), p. 27 - illustration of Maciejowski Bible c. 1250

37.4 Bibliography

- Gillingham, John (1978). *Richard the Lionheart*. London: Weidenfeld & Nicolson. ISBN 0-297-77453-0.
- Gravett, Christopher (1993) *Norman Knight 950-1204 AD*, Osprey, London.
- Nicolle, David, (1988) *The Crusades*, Osprey, London.
- Nicolle, David, (1996) *Knight of Outremer 1187-1344 AD*, Osprey, London.



Knights wearing enclosed helmets. German manuscript c. 1215 - Henrik van Veldeke

Chapter 38

Frog-mouth helm

The **frog-mouth helm** (or **Stechhelm** meaning *stinging helmet* in German) was a type of **great helm**, appearing from around 1400 and lasting into the first quarter of the 16th century.^[1] The helmet was primarily was used by mounted knights for tournaments rather than on the battlefield.^[2]

The frog-mouth analogy was drawn from the way the ocularium of the helmet (the slit through which the wearer could see) had the appearance the open mouth of a frog. During jousting tournaments, the helmet offered a better degree of protection from lances that had splintered on impact with body armour. Early examples of the helmet were a made from a single piece of metal, while later dated helmets had hinged constructions that could be disassembled.

38.1 History

Appearing in the 15th and 16th century in Germany, the helmet became popular for **jousting** due to the improved protection of the eyes it offered. Early one-piece examples were later improved with hinged varieties. In the late 15th century, it became customary for the helmet to be mounted with screws onto the wearer's **cuirass**, though this only allowed the wearer to look forward.

Later versions had hinges and could be opened in the front for ventilation, while also “folding” around the wearer’s head to put on and “unfolding” to be removed. The helm had vents allowing the wearer to breathe more easily whilst using it, as well as allowing non-muted noise to enter into the helm. Underneath the helm, the wearer traditionally had a leather cowl to protect from concussive impacts. The cowl was attached with leather straps and cords fastened to the helmet, so that a certain degree of head movement was guaranteed. A popular jousting technique was, at the last minute, to pull the head up. This completely obscured the vision for the wearer, but it protected the eyes from the splinters of the lance as it broke on his armour.

38.2 References

[1] “The Great Helm”. myarmoury.com. Retrieved 15 February 2015.

[2] Grancsay, Stephen V. (1956). *A Jousting Harness*. Philadelphia Museum of Fine Art Bulletin. pp. 3–7.



German stechhelm, c. 1500

Chapter 39

Hounskull

A **hounskull** was a form of **steel helmet** worn in **Europe** in the **Middle Ages**, almost invariably by **knights** and other mounted **men-at-arms**, from the middle of the 14th century until approximately 1420. It offered extensive protection for the wearer's face, at the cost of visibility, but its distinctive visor could be raised or lowered at will.

39.1 Form

The hounskull was a form of **bascinet** with a **visor** covering the entire face. It is the visor which gives the helmet its name, as this resembles the face of a hound, with a protruding muzzle in order to better protect the face from blows and to grant greater ventilation (which was largely afforded the wearer, when the visor was down, through holes in the “muzzle,” such holes being either on the right side of the “muzzle” with additional holes near the mouth,^[1] or on both sides).

The visor swung up to uncover the wearer's face when he was not in combat, to grant him better visibility and unrestricted ventilation. This was accomplished in one of two ways. The most common form of visor in Central Europe was held on by a single hinge fastened to the center of the top of the visor, called a *Klappviser*. The other version had two pivot bolts on either side of the visor attaching it to the bascinet at the temples, and this was the most common form found in Southern, Western and Northwestern Europe.

The wearer peered through two vision slots when the visor was lowered. The vision slots were either relatively flush with the visor, as was the custom in Western Europe, or elevated on mounts on the visor, as was commonly the case in Central Europe.

As with all bascinets, the helmet generally had attachment points for armour to protect the neck and upper body, initially an **aventail** of **mail** and, later, plate armour. The chain aventail could have a decorative cloth cover.^[2]

39.2 Usage

The addition of the visor to the bascinet came about due to the ongoing need to protect the face of the man-at-arms. The **great helm** had been increasingly abandoned for the bascinet in the first half of the fourteenth century, but the bascinet did not protect the face, and this led to increasing casualties to the wearer, particularly in the **Hundred Years War**, due to the dominance of the **longbow** as a weapon. Various expedients were adopted, eventually culminating in a full hounskull helmet with its visor soon after 1350.

This helmet became so ubiquitous that it was virtually the symbol of the knight during the second half of the fourteenth century, sometimes illustrated as worn by all knightly combatants in period illustrations. The hounskull lingered in use for some time after that, although it was decidedly out of fashion after the second decade of the fifteenth century. The last time it is depicted in widespread use in period art is by the “Armagnac” mercenaries who invaded **Switzerland** in 1444.



A hounskull helmet, 14th century



Milan hounskull, c. 1400

39.3 Modern terminology

The English term “hounskull” is considered by some historians to have been a derivation of the German term for the helmet, *hundsugel*, meaning “hound’s hood.”^[3] The Victorian historians who described the helmet often referred to it as a “pig-faced” helmet, although that term was not used in the Medieval period.

39.4 Notes

[1] Singman and McLean, *Daily Life*, 148-149

[2] Nicolle, *Italian Medieval Armies*, 35

[3] Gravett, *English Medieval Knight*, 26.

39.5 References

- Gravett, Christopher. *English Medieval Knight, 1300-1400*. Osprey Publishing, 2002. ISBN 1-84176-145-1.



Cologne hounskull with centrally hinged visor

- Nicolle, David. *Italian Medieval Armies, 1300-1500*. Osprey Publishing, 1983. ISBN 0-85045-477-8.
- Singman, J.; and McLean, W. *Daily Life in Chaucer's England*. Greenwood Press, 1999. ISBN 0-313-29375-9.

Chapter 40

Lobster-tailed pot helmet



Lobster-tailed pot helmet. This example has a single sliding nasal bar and fixed peak to protect the face, Dutch mid 17th century

The **lobster-tailed pot helmet**, also known as the **zischagge**, horseman's pot and **harquebusier's pot**, was a type of post-Renaissance **combat helmet**. It became popular in Europe, especially for cavalry and officers, from c. 1600; it was derived from an Ottoman Turkish helmet type. The helmet gradually fell out of use in most of Europe in the late 17th century; however, the Austrian heavy cavalry retained it for some campaigns as late as the 1780s.

The French term *capeline* was also used for this helmet, however, usage of this word was not precise. "*Capeline*" was indiscriminately used to denote various types of hat, and helmets other than the lobster-tailed pot.

40.1 Origin

The lobster-tailed pot helmet had an oriental origin, being derived from the Ottoman Turkish 'chichak' (Turkish - *çiçak*) helmet, which developed in the 16th century. It was adopted by the Christian states of Europe in the early 17th century. The chichak was almost identical to the later European helmets - it had a forward projecting peak, sliding bar nasal, cheekpieces and neck guard; only its tendency to have a conical rather than rounded skull was distinctive.^[1] The European derivative of this helmet saw widespread use during the Thirty Years War when it became known as the *zischagge*, a Germanisation of the original Turkish name.

40.2 Characteristics

The lobster-tailed pot had a rounded skull-piece, which was sometimes fluted. The skulls of English-made helmets were usually formed from two sections, joined by a raised comb running from front to back; the skulls of helmets manufactured on the continent were most often raised from a single-piece of metal. Cheekpieces, commonly made in one piece but occasionally articulated, were attached to the skull by leather strapping; however, the better quality examples are sometimes hinged. To protect the face there was either a fixed forward projecting peak that incorporated a sliding nasal bar retained by a large screw, or a hinged peak with three attached bars. Finally, the helmet had a laminated defence (or a single-piece of plate ridged to imitate separate lames) to protect the back of the head and neck that was said to resemble the tail of a lobster.^{[2][3]} Another common name for the helmet was the "harquebusier's pot", the *harquebusier* being the most common type of cavalry in Western Europe during the 17th century.^[4] The single nasal-bar type was characteristic of Continental Europe, whilst the three-barred type with a pivoting peak was more widely used in the British Isles.^[5] Many European-made lobster-tailed pot helmets were later imported to Britain during the English Civil War. Occasionally, older helmets like the *burgonet* or *sallet* were modified to resemble the 'lobster-pot'.^[6] As stated by General George Monck in 1644, the "headpiece with three small bars" was intended to be pistol-proof.^[7]

40.3 Decoration and appearance

The appearance and finish of lobster-tailed pots varied greatly, from the highly decorated, superb-quality examples made for individual commanders down to crudely executed "munition-quality" types, which were mass-produced to equip large numbers of ordinary cavalry troopers. High quality helmets could be decorated using a range of techniques, including *repoussé*, engraving and blue-and-gilt finishes. An extant helmet made for King James II of England had the three bar face defence replaced by a pierced openwork plate depicting the full royal arms of England, sight being afforded by spaces within the design. Many helmets were blackened or browned as a treatment to weatherproof them and protect against rust. The better quality helmets given this treatment would often have had their sombre appearance relieved by the use of numerous gilded rivet heads. Some of the most flamboyantly decorated helmets were produced for the Polish winged hussars, with metal crests and enlarged, decoratively shaped, nasals being not uncommon.^[8] A number of extant helmets have tubular plume-holders attached, this, taken with the evidence of contemporary illustrations, indicates the use of feather plumes.^[9]

40.4 Use

This form of helmet was widely used during the Thirty Years War and English Civil War; it was commonly known as a *zischagge* in Germany and a 'horseman's pot' or 'three-barred pot' in Britain; the term 'lobster-tailed pot' is widely used in modern scholarship. The typical cavalryman of the period, the *harquebusier*, would have worn the helmet with a buff coat, bridle-hand gauntlet and breastplate and backplate. It was also sometimes worn by a more heavily armoured type of cavalry, the *cuirassier*, combined with three-quarter armour.^[10] It was used by cavalry on both sides of the English Civil War including Oliver Cromwell's Ironside cavalry.^[11] The common misconception of Cavaliers wearing plumed wide-brimmed hats whilst the Roundheads wore helmets is eloquently disproved by a surviving order signed by Charles I himself for 33 'potts', along with other cavalry armour, for the use of his own troop of horse in 1642. Another order, this time from the Parliamentary authorities, dating to 1644 for 300 "potts with three barres English" indicates that each helmet, no doubt of basic quality, cost 7 shillings.^[12]

Similar helmets were worn in the 17th century by Polish winged hussars and were termed "*szyszak*" in Polish, again

a derivative of the original Turkish name.^[13] Austrian cuirassiers were equipped with the lobster-tailed pot helmet as late as the 1780s, long after its use had died out elsewhere, when campaigning against the Ottoman Turks.^[14]

40.5 Notes

- [1] Robinson pp. 62-63
- [2] Blackmore, pp. 15-16
- [3] Oakeshott, pp. 221-222
- [4] Tincey, p. 5
- [5] Blackmore, p. 15
- [6] Blackmore, p. 16
- [7] Tincey, p. 11
- [8] Bull, pp. 111, 118, 121
- [9] Blackmore, pp. 15-16
- [10] Tincey, pp. 11-12
- [11] Blackmore pp. 15-16
- [12] Tincey, p. 12
- [13] Brzezinski, p. 7
- [14] Haythornthwaite, p. 16

40.6 References

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Modern reproduction of a helmet of James II of England made in 1686, the face protection is in the form of an openwork depiction of the royal coat-of-arms



Polish Hussar szyszak with elaborate wing-like crests of pierced metal, 17th century

Chapter 41

Coif

For “coiffure”, see Hairstyle.

A **coif** /ˈkɔɪf/ is a close fitting cap that covers the top, back, and sides of the head.



Detail of Edward VI as a child by Holbein, 1538: he wears a linen coif under a cloth-of-gold coif and a feathered hat.

41.1 History

Coifs date from the 13th century, but fell out of popularity with men in the 14th century.^[1] Coifs were worn by all classes in England and Scotland from the Middle Ages to the early seventeenth century (and later as an old-fashioned

cap for countrywomen and young children).

Tudor (later Stewart in Scotland) and earlier coifs are usually made of unadorned white linen and tied under the chin. In the Elizabethan and early Jacobean eras, coifs were frequently decorated with blackwork embroidery and lace edging. Coifs were worn under gable hoods and hats of all sorts, and alone as indoor headcoverings.

Coifs were also worn by a now-defunct senior grade of English lawyer, the Serjeant-at-Law even after they became judges.^[1] A United States law school honor society, the Order of the Coif, is named after this use of the coif.

The traditional religious habit of Catholic nuns and Religious Sisters included a coif as a headpiece, along with the white cotton cap secured by a bandeau, to which the veil would be attached, along with a white wimple or guimpe of starched linen or cotton to cover the cheeks, neck and chest.

Coifs were also a type of armour, traditionally made of mail, which covered the head (face excluded), neck and shoulders.

41.2 See also

- 1500–1550 in fashion
- 1550–1600 in fashion

41.3 References

[1] “A New Look for Women.” Arts and Humanities Through the Eras. Gale. 2005. Retrieved August 13, 2012 from HighBeam Research: <http://www.highbeam.com/doc/1G2-3427400451.html>

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- Digby, George Wingfield (1964) *Elizabethan Embroidery*. New York: Thomas Yoseloff

41.4 External links

- Tudor and Elizabethan Coifs
- Medieval Men's Coifs
- Coif



Medieval coif as worn by Aaron of Sur

Chapter 42

Morion (helmet)



A Spanish conquistador comb morion (c. 17th century)

A **morion** is a type of open helmet used from the middle 16th and early 17th centuries, usually having a flat brim and a crest from front to back. Its introduction was contemporaneous with the exploration of North, Central, and South America. Explorers like **Hernando de Soto** and **Coronado** may have supplied them to their foot soldiers in the 1540s.



An ornate morion with cheek-guards from the Philippine Moros (c. 18th/19th century). Note the slight resemblance to the lobster tail pot.

42.1 History

The iconic morion, though popularly identified with early Spanish explorers and conquistadors, was not in use as early as the conquest of Mexico at the hands of Hernan Cortez or Francisco Pizarro's conquest of the Incas in South America. Thirty to forty years later, it was widely used by the Spanish, but also common among foot soldiers of many European nationalities, including the English; the first English morions were issued during the reign of Edward VI.^[1] Low production costs aided its popularity and dissemination although officers and elite guards^[2] would have theirs elaborately engraved to display their wealth and status.^{[3][4]}

The crest or comb on the top of the helmet was designed to strengthen it. Later versions also had cheek guards and even removable faceplates to protect the soldier from sword cuts.^[5]

The morion's shape is derived from that of an older helmet, the *Chapel de Fer*, or "Kettle Hat."^[6] Other sources suggest it was based on Moorish armor and its name is derived from *Moro*, the Spanish word for Moor.^[7] The *New Oxford American Dictionary*, however, derives it from Spanish *morrión*, from *morro* 'round object'.^[8] The *Dictionary of the Spanish Language* published by the Royal Spanish Academy indicates that the Spanish term for the helmet, *morrión*, derives from the noun *morra*, which means "the upper part of the head".^[9]

In England this helmet (also known as the **pikeman's pot**) is associated with the New Model Army, one of the first professional militaries.^[10] It was worn by pikemen, together with a breastplate and buff coat as they stood in phalanx-like pike and shot formations, protecting the flanks of the unarmored musketeers.^[11]



A late 16th century Italian cabasset, somewhat similar to the morion though it lacks the comb and has a taller crown, and is a different shape.

It provided protection during the push of pike maneuvers known for their high casualty rates.^[12] Although mostly issued to Oliver Cromwell's Parliamentary troops, many Cavaliers wore the morion as well, leading to confusion in battles; soldiers risked being shot by their own allies. It was for this reason uniforms were introduced to identify armies. First these were simple colored sashes but soon the Roundheads introduced red coats which were retained by the army after the 1660 Restoration of Charles II.^[13]

Surviving morions from its 1648 siege have been unearthed and preserved at Colchester Castle^[14] along with a lobster tail pot, a helmet associated with Cromwell's heavily armored Ironside cavalry.

Some captured Spanish armor was worn by **Native Americans** as late as the 19th century as protection from bullets and a sign of their status.^[15] The most famous of these was the **Comanche** chief **Iron Jacket** who lived in Texas and wore armor that originally belonged to a conquistador.^[16]

In the **Philippines**, the native **Moro** people adopted the morion and **burgonet** design for helmets (as well as **chainmail** and horn coats) during the **Spanish–Moro Wars** and the **Moro Rebellion**. The indigenously produced helmets are usually made of iron or brass and are elaborately decorated with floral **arabesque designs**, usually in silver. They had a large visor and neck guard, movable cheek guards, a high crest, and three very tall feathered plumes reaching 60 cm (24 in) inserted on the front.^{[17][18]}

42.2 Cabasset

A similar helmet, the Cabasset, was introduced around the same time in Italy.^[19] Like its Spanish counterpart, it was worn by infantry in the **pike and shot** formations. The stalk-like projection on the top resembled a pear, which is how it gained its name.^{[20] [21]} It was popular in 16th century England and was used during the **Civil War**. Several of these helmets were taken to the New World by the **Pilgrim fathers**, and one of these has been found on **Jamestown Island**.^[22]

42.3 Modern times

- The morion may have influenced the design of the **Adrian Helmet** issued to French and Italian troops during World War I. Both are of a similar shape and have a comb reinforcing the top of the helmet.^[23]
- The comb morion (with a red crest added) is part of the uniform of the **Pope's Swiss Guards**.^[24] A Swiss guardsman in his morion appears on the **Vatican City** commemorative 2 Euro coin.
- From 1928 until 1961, the morion served as the logo of automobile manufacturer **DeSoto**, named after the 16th century explorer **Hernando de Soto**. It appeared as the **hood ornament** on cars of the 1940s and 1950s like the **DeSoto Deluxe**.^[25]
- The seal of the city of **Cupertino**, California, includes a morion.
- The morion appears on the insignia of the **53rd Infantry Brigade Combat Team**, the largest of the Florida Army National Guard, in tribute to the early militias of Florida under Spanish rule.

42.4 In popular culture

- Helmets like the morion and cabasset feature in historical dramas set in the **Elizabethan period**, generally worn by extras portraying guards.^[26] Such works include the films *Elizabeth: The Golden Age*, *Cromwell*, *Witchfinder General* and BBC TV series like *The Tudors* and *Blackadder 2*.^[27]
- In both the **stage** and **film versions** of the musical *Man of La Mancha*, the soldiers of the **Spanish Inquisition** all wear morion helmets, and in the film (but not the play), **Don Quixote's** helmet is a morion with a makeshift visor artificially attached to it, as **Cervantes** describes in his novel *Don Quixote de la Mancha*. (The play uses a regular knight's helmet with a non-makeshift visor.)
- In *Dances With Wolves* the Indian chief presents Lt. Dunbar with a morion.
- In the Disney movie *Pocahontas*, English soldiers like **Captain John Smith** wear morions.^[28]
- Morions appear in the fantasy film *The Chronicles of Narnia: Prince Caspian*. They are worn by the **Telmarines**, soldiers of the evil king **Miraz** and descendants of pirates from Earth.^[29]
- In *The Lord of the Rings: The Two Towers*, **orc sappers** wearing morions plant explosives in the wall of **Helm's Deep**. Other **Uruk-hai** wear helmets resembling the lobster tail pot.



A member of the Swiss Guard with a black morion in the Vatican.

42.5 References

- [1] European comb morion
- [2] Morion, late 16th century, associated with the Munich town guard
- [3] Morion by Pompeo della Cesa, Milan, 1585 - 1590 on view at Lennart Viebahn Arms & Armour
- [4] Morion helmet

- [5] Pikeman's Pot
- [6] Spanish Conquistador Helmet - Comb Morion, helmet replica.
- [7] Hermitage Museum
- [8] *New Oxford American Dictionary* (2nd ed., 2005), p. 1102.
- [9] Morrión, *Diccionario de la Lengua Española*, 22nd ed., 2001
- [10] C.H. Firth. *Cromwell's Army* 4th ed., 1972, p. 70
- [11] Eventplan photograph
- [12] Oman, Charles. *A History of the Art of War in the Sixteenth Century*. London: Methuen & Co., 1937.
- [13] Barthorp, Michael. *British Infantry Uniforms Since 1660*. Blandford Press 1982 Ltd, 1982. ISBN 1-85079-009-4
- [14] Colchester Castle museum
- [15] *The Fighting Cheyennes*, by George Bird Grinnell (2004)
- [16] Iron Shirt
- [17] Herbert W. Krieger (1899). *The Collection of Primitive Weapons and Armor of the Philippine Islands in the United States National Museum*. Smithsonian Institution - United States National Museum - Bulletin 137. Washington: Government Printing Office.
- [18] George Cameron Stone (1934). *A Glossary of the Construction, Decoration, and Use of Arms and Armor in All Countries and in All Times: Together with Some Closely Related Subjects*. Southwork Press. p. 66.
- [19] Encyclopedia of Historical Weapons
- [20] Pear - Stalk Cabasset, Northern Italy, 1580 - 1590 on view at Lennart Viebahn Arms & Armour
- [21] Cabasset replica
- [22] Cabasset found at Jamestown
- [23] Adrian helmet
- [24] Swiss guards on the Vatican website
- [25] Classic Desoto cars
- [26] Footage from *Elizabeth: The Golden Age*
- [27] Footage from *Blackadder* on YouTube
- [28] *Pocahontas* at the Internet Movie Database
- [29] Narnia on Disney website

Chapter 43

Nasal helmet

The **nasal helmet** was a type of **combat helmet** characterised by the possession of a projecting bar covering the nose and thus protecting the centre of the face; it was of Western European origins and was used from the **Early Middle Ages** until the **High Middle Ages**.

43.1 Early forms

The nasal helmet was characterised by the possession of a nose-guard, or 'nasal', composed of a single strip of metal that extended down from the skull or browband over the nose to provide facial protection. The helmet appeared throughout Western Europe late in the 9th century, and became the predominant form of head protection, replacing previous types of helmet whose design was ultimately based on Late Roman types such as the **'ridge helmet'** and early helmets of **spangenhelm** construction. Early nasal helmets were universally conical in shape. The skull could be raised from a single sheet of iron or be of composite, segmented (spangenhelm) construction. The spangenhelm variety was, in general, the earlier method of construction. Single-piece skulls, being technically more difficult to produce, became more common with the increase in metallurgical skill over time.^[1]

Though nasals had been used on earlier helmets, and on contemporary helmets found in Byzantium, Slavic Eastern Europe and the Middle East, those characteristic of the nasal helmet were in general larger and were fully integrated into either the skull or browband of the helmet.^[2] The nasals of other helmets tended to be riveted to the skull either directly or as part of a, 'T' shaped, combined nasal and eyebrow-piece.^[3]

43.2 Later developments

From being uniformly conical in shape, the skull of the nasal helmet became more varied during the 12th century. For most of the century nasal helmets with a forward deflected apex, often called the **'Phrygian cap'** shape, were in widespread use. It is possible that the deflection of the apex of the skull was the natural result of making the front of the helmet thicker than the rest of the helmet during the process of raising the skull from sheet iron.^{[4][5][6]}

Though still used, the conical type of helmet declined in popularity during the latter half of the 12th century and round-topped nasal helmets came into fashion. King **Richard I of England** is depicted wearing a round-skulled nasal helmet on his first Great Seal (1189).^[7]

A further type of nasal helmet developed in the late 12th century. This helmet had a flat top and a square profile. This form of nasal helmet was the forerunner of deeper, cylindrical helmets with greater facial protection, **enclosed helmets**, and eventually the **great helm**.^[8] The existing nasal formed the basis for increased facial protection, eventually, by 1200, producing a face covering plate which was pierced for sight and ventilation.^[9]

The helmet began to lose popularity at the end of the 12th century to helmets that provided more facial protection, and although the nasal helm lost popularity amongst the higher classes of knights and men-at-arms, they were still used by archers to whom a wide field of vision was crucial. Round-skulled nasal helmets can also be seen worn by a proportion knights throughout the French **Maciejowski Bible** dating to 1250.^[10] No doubt some knights preferred the better vision and hearing afforded by this more open helmet.



11th century Moravian nasal helmet, Vienna. One of the few remaining examples of such helmets.

43.3 Use

The nasal helmet would usually have been worn over a mail *coif*, which protected the lower parts of the head, throat and neck. The coif could be a separate item of armour or be formed as an extension of the mailcoat itself. The existence of rivets and holes around the lower edge of these helmets indicate that they were lined in some manner, though no linings as such have survived. Practical considerations suggest that linings must have been adjustable to ensure a secure fit.^[11]

The nasals of these helmets were often so large that the wearer was unrecognisable to an observer. The celebrated incident at the *Battle of Hastings*, illustrated on the *Bayeux tapestry*, where *William the Conqueror* had to lift his helmet to show his troops that he was still alive is an indication of the anonymity nasal helmets produced.^[12]

43.4 References

- [1] Gravett, p. 11
- [2] Gravett, p. 20
- [3] D'Amato, p. 33 and 47
- [4] Gravett, p. 17
- [5] Nicolle (1988), p. 55
- [6] Nicolle (1987), p. 9
- [7] Nicolle (1988), p. 56
- [8] Nicolle (1988), p. 57
- [9] Gravett, p. 17
- [10] Nicolle (1988), p. 27
- [11] Gravett, pp. 9-11
- [12] Nicolle (1987), p. 56

43.5 Bibliography

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Helmet of Saint Wenceslaus, Prague



Nasal helmet of the 'Phrygian cap' shape, 12th century



Nasal helmet with a rounded skull, latter part of the 12th century



The knight at the centre is wearing a flat-topped helmet. Murder of Thomas Becket, manuscript c. 1200

Chapter 44

Spangenhelm

The **Spangenhelm** was a popular medieval European combat helmet design of the Late Antiquity and Early Middle Ages.^[1]

44.1 Construction

The name Spangenhelm is of German origin. *Spangen* refers to the metal strips that form the framework for the helmet and could be translated as *braces*, and *-helm* simply means helmet. The strips connect three to six steel or bronze plates. The frame takes a conical design that curves with the shape of the head and culminates in a point. The front of the helmet may include a nose protector (a *nasal*). Older spangenhelms often include cheek flaps made from metal or leather. Spangenhelms may incorporate *mail* as neck protection, thus forming a partial *aventail*. Some spangenhelms include eye protection in a shape that resembles modern eyeglass frames. Other spangenhelms include a full face mask.

The spangenhelm was an effective protection that was relatively easy to produce. Weakness of the design were its partial head protection and its jointed construction. It was replaced by similarly shaped helmets made with one-piece skulls (*nasal helms*), *kettle hats* and eventually the *Great helm* or *casque*.

44.2 History

The spangenhelm arrived in Western Europe by way of what is now southern *Russia* and *Ukraine*, spread by nomadic *Iranian* tribes such as the *Scythians* and *Sarmatians* who lived among the *Eurasian steppes*. By the 6th century it was the most common helmet design in Europe and in popular use throughout the Middle East. However, helmets of the spangenhelm type were used much longer. Some of the *Nasal helmets* depicted on the *Bayeux Tapestry* from the 11th century appear to be built as a Spangenhelm construction. The same is true for illustrations of the *Morgan Bible* from the 13th century.

44.3 Similar helmets

Similar but more simple helmets, the so-called *Broadband helmets* were used in parallel. These helmets may have been used until the 10th century, as depicted in the *The Leiden Maccabees manuscript* from the early 10th century. Related to the Spangenhelm were also *Lamellar helmets* or intermediate *Lamellar-Spangen helmets*, like the helmet from a 6th-century boys grave, found under the *Cologne Cathedral*.^[2]

A similar construction principle is found the *Northern ridge helmets*, a group, which includes Scandinavian *Vendel Era* helmets and *anglo-saxon* helmets, like the *Coppergate Helmet* or the *Pioneer Helmet*.



A surviving Spangenhelm, 6th century (Kunsthistorisches Museum, Vienna)



Spangenhelm (iron), Migration Period - Museum of the Cetinska Krajina Region - Sinj, Croatia

44.4 Notes

Portions of this article were translated from the German Wikipedia.

[1] From the German Wikipedia, in **heraldry** a different kind of helmet is known as a spangenhelm. The latter helmet was a fifteenth and sixteenth tournament helmet style.

[2] Paul Mortimer: *Woden's Warriors: Warfare, Beliefs, Arms & Armour in Northern Europe During the 6-7th Centuries*. Anglo-Saxon Books, 2011. ISBN 978-1898281603



Sarmatian warriors with Spangenhelms, Trajans column (around 110 A.D.)

44.5 External links

- [How to Build a Spangenhelm](#)

Chapter 45

Kettle hat



Medieval kettle hat, worn with a mail coif

A **kettle hat** is a type of **helmet** made of **steel** in the shape of a brimmed **hat**. There are many design variations. The only common element is a wide brim that afforded extra protection to the wearer. It gained its common English language name from its resemblance to a metal cooking pot (the original meaning of *kettle*).

The kettle hat was common all over **Medieval Europe**. It was called *Eisenhut* in German and *chapel de fer* in French (both names mean “iron hat” in English). It was worn by troops of all types, but most commonly by **infantry**. The wide brim gave good protection against blows from above, such as from **cavalry** swords, and was very useful in siege warfare as the wide brim would protect the wearer from projectiles shot or dropped from above. They were first produced (as reported in Documentaria Anglo, 1478) in England around 1011, 55 years before the famous **Battle of Hastings**. These hats, although cheap, were not admired because they were considered only suitable for infantry and did not have the high grace or extravagance of a **knighthly** helm like the **bascinet** or **great helm**. However, those



World War II British Mark II kettle steel helmet

who did use it proved that it was something worthwhile. In many films, English men-at-arms and foot soldiers are often seen wearing these helms. An extra benefit was that the rim protected from direct sunlight, preventing getting dazzled.

Hat-shaped helmets were not just a European invention. Japanese *Ashigaru* infantrymen wore the *jingasa*, a helmet shaped like the Japanese form of the conical Asian hat.

When helmets reappeared in World War I, the kettle hat made its comeback as the British and U.S. Brodie helmet (often called **tin hat**), as well as the French Adrian helmet. These kettle helmets were also used in World War II by the British, Commonwealth forces (such as Australia and Canada), and also by the Americans later in the war. The British produced a helmet for civilian use in World War II designed to give more protection to the head and neck from above.

Chapter 46

Visor (armor)

A **visor** was used in conjunction with some **Medieval** war helmets such as the **bascinet**. The visor usually consisted of a hinged piece of steel that contained openings for breathing (“breaths”) and vision. Visors protected the face during battle. Most knights or warriors who wore visors usually were spotted on horses during war, and more specifically in tournaments. The word *beaver* is sometimes used interchangeably with *visor*, as in **Shakespeare's** *Hamlet*, when Hamlet and Horatio are discussing the Ghost. Hamlet says: “Then saw you not his face?” to which Horatio responds “O yes, my lord. He wore his beaver up [i.e., his visor raised]”.

- Early type of visor known as Klappvisier
- The prominent visor of a **bascinet**, c. 1400. **Kunsthistorisches Museum**, Vienna, Austria
- Double visor (first appeared for armets and close helms mat 20s of 16c)
- Early Double Visored (Sallet transitional to close helm). The bevor and the forehead attached to the same pivot as the upper visor. Some version of this kind of sallet had additional nape protection under the tail.

Chapter 47

Falling buffe

The **Falling buffe** is 16th Century **armour** for the throat and lower face. It evolved from the **bevor** and was composed of several **lames**, retained in place by spring catches, which could be lowered for better ventilation and vision.



Falling buffe

Chapter 48

Mail (armour)

“Chainmail” redirects here. For other uses, see [Chainmail \(disambiguation\)](#).

“Maille” redirects here. For other uses, see [Maille \(disambiguation\)](#).

Mail (chainmail, maille) is a type of **armour** consisting of small metal rings linked together in a pattern to form a mesh.

48.1 History

The earliest example of mail was found in a **Celtic** chieftain’s burial located in **Ciumeşti, Romania**.^[1] Its invention is commonly credited to the Celts,^[2] but there are examples of **Etruscan** pattern mail dating from at least the 4th century BC.^{[3][4][5]} Mail may have been inspired by the much earlier **scale armour**.^{[6][7]} Mail spread to North Africa, the Middle East, Central Asia, India, Tibet, South East Asia, and Japan.

Mail continues to be used in the 21st century as a component of stab-resistant **body armour**, cut-resistant gloves for butchers and woodworkers, shark-resistant **wetsuits** for defense against shark bites, and a number of other applications.

48.2 Etymology

The origins of the word “mail” are not fully known. One theory is that it originally derives from the Latin word *macula*, meaning “spot” or “opacity” (as in **macula of retina**).^[8] Another theory relates the word to the old French “maillier”, meaning “to hammer” (related to the modern English word “malleable”).^[8]

The first attestations of the word “mail” are in Old French and Anglo-Norman: “maille” “maile”, or “male” or other variants, which became “mailye” “maille” “maile”, “male”, or “meile” in Middle English.^[9]

The modern usage of terms for mail armour is highly contested in popular and, to a lesser degree, academic culture. Medieval sources referred to armour of this type simply as “mail”, however “chain-mail” has become a commonly used, if incorrect **neologism** first attested in Sir Walter Scott’s 1822 novel *The Fortunes of Nigel*.^[10] Since then the word “mail” has been commonly, if incorrectly, applied to other types of armour, such as in “plate-mail” (first attested in 1835).^[11] The more correct term is “plate armour”.

Civilizations that used mail invented specific terms for each garment made from it. The standard terms for European mail armour derive from French: leggings are called **chausses**, a hood is a **coif**, and mittens, **mitons**. A mail collar hanging from a helmet is a **camail** or **aventail**. A shirt made from mail is a **hauberk** if knee-length and a **haubergeon** if mid-thigh length. A layer (or layers) of mail sandwiched between layers of fabric is called a **jazerant**.

A waist-length coat in medieval Europe was called a byrnie, although the exact construction of a byrnie is unclear, including whether it was constructed of mail or other armour-types. Noting that the byrnie was the “most highly valued piece of armour” to the **Carolingian** soldier, Bennet, Bradbury, DeVries, Dickie, and Jestice^[12] indicate that:

There is some dispute among historians as to what exactly constituted the Carolingian byrnie. Relying... only on artistic and some literary sources because of the lack of archaeological examples, some believe that it was a heavy leather jacket with metal scales sewn onto it. It was also quite long, reaching



Riveted mail and plate coat zirah bagtar. Armour of this type was introduced into India under the Mughals.

below the hips and covering most of the arms. Other historians claim instead that the Carolingian byrnie was nothing more than a coat of mail, but longer and perhaps heavier than traditional early medieval mail. Without more certain evidence, this dispute will continue.



Statue of a Gallic warrior in mail.

48.3 Mail armour in Europe

The use of mail as battlefield armour was common during the Iron Age and the Middle Ages, becoming less common over the course of the 16th and 17th centuries. It is believed that the Roman Republic first came into contact with



Mail armour and equipment of Polish medium cavalryman, from the second half of the 17th century

mail fighting the Gauls in Cisalpine Gaul, now Northern Italy,^[13] but even earlier in time, a different pattern of mail was already in use among the Etruscans. The Roman army adopted the technology for their troops in the form of the *lorica hamata* which was used as a primary form of armour through the Imperial period.

After the fall of the Western Empire much of the infrastructure needed to create plate armour diminished. Eventually



Panel from the Bayeux Tapestry showing Norman and Anglo-Saxon soldiers in mail armour. Note the scene of stripping a mail hauberk from the dead at the bottom.

the word “mail” came to be synonymous with armour.^{[14][15][16][17]} It was typically an extremely prized commodity as it was expensive and time consuming to produce and could mean the difference between life and death in a battle. Mail from dead combatants was frequently looted and was used by the new owner or sold for a lucrative price. As time went on and infrastructure improved it came to be used by more soldiers. Eventually with the rise of the lanced cavalry charge, impact warfare, and high-powered crossbows, mail came to be used as a secondary armour to plate for the mounted nobility.

By the 14th century, plate armour was commonly used to supplement mail. Eventually mail was supplanted by plate for the most part as it provided greater protection against windlass crossbows, bludgeoning weapons, and lance charges. However, mail was still widely used by many soldiers as well as brigandines and padded jacks. These three types of armour made up the bulk of the equipment used by soldiers with mail being the most expensive. It was sometimes more expensive than plate armour.^[18] Mail typically persisted longer in less technologically advanced areas such as Eastern Europe but was in use everywhere into the 16th century.

During the late 19th and early 20th century mail was used as a material for bulletproof vests, most notably by the Wilkinson Sword Company.^{[19][20]} Results were unsatisfactory; Wilkinson mail worn by the Khedive of Egypt's regiment of “Iron Men”^[21] was manufactured from split rings which proved to be too brittle, and the rings would fragment when struck by bullets and aggravate the damage.^[22] The riveted mail armour worn by the opposing Sudanese Madhists did not have the same problem but also proved to be relatively useless against the firearms of British forces at the battle of Omdurman.^[23] During World War I Wilkinson Sword transitioned from mail to a lamellar design which was the precursor to the flak jacket.

Also during World War I a mail fringe, designed by Captain Cruise of the British Infantry, was added to helmets to protect the face. This proved unpopular with soldiers, in spite of being proven to defend against a three-ounce (100 g) shrapnel round fired at a distance of one hundred yards (90 m).



Tibetan warrior in mail reinforced by additional mirror plate

48.4 Mail armour in Asia

Mail Armour was introduced to the Middle East and Asia through the Romans and was adopted by the Sassanid Persians starting in the 3rd century AD, where it was supplemental to the scale and lamellar armours already used. Mail was commonly also used as horse armour for **cataphracts** and heavy cavalry as well as armour for the soldiers

themselves. Asian mail was typically lighter than the European variety and sometimes had prayer symbols stamped on the rings as a sign of their craftsmanship as well as for divine protection.^[24] Indeed, mail armour is mentioned in the **Koran** as being a gift revealed by Allah to David:

21:80 *It was We Who taught him the making of coats of mail for your benefit, to guard you from each other's violence: will ye then be grateful?* (Yusuf Ali's translation).

From the Middle East mail was quickly adopted in Central Asia by the Sogdians and by India in the South. It was not commonly used in Mongol armies due to its weight and the difficulty of its maintenance, but it eventually became the armour of choice in India. Indian mail was often used with plate protection. **Plated mail** was in common use in India until the **Battle of Plassey** and the subsequent British conquest of the sub-continent.

The **Ottoman Empire** used plated mail widely and it was used in their armies until the 18th century by heavy cavalry and elite units such as the Janissaries. They spread its use into North Africa where it was adopted by **Mamluk** Egyptians and the Sudanese who produced it until the early 20th century.

Mail was introduced to **China** when its allies in Central Asia paid tribute to the **Tang Emperor** in 718 by giving him a coat of "link armour" assumed to be mail. China first encountered the armour in 384 when its allies in the nation of **Kuchi** arrived wearing "armour similar to chains". Once in China mail was imported but was not produced widely. Due to its flexibility and comfort, it was typically the armour of high-ranking guards and those who could afford the import rather than the armour of the rank and file, who used the easier to produce and maintain brigandine and **lamellar** types. However, it was one of the only military products that China imported from foreigners. Mail spread to Korea slightly later where it was imported as the armour of imperial guards and generals.

48.4.1 Mail armour (kusari) in Japan

Main article: **Kusari** (Japanese mail armour)

The Japanese had more varieties of mail than all the rest of the world put together.^[25] In Japan mail is called *kusari* which means chain. When the word *kusari* is used in conjunction with an armoured item it usually means that the *kusari* makes up the majority of the armour defence.^[26] An example of this would be *kusari gusoku* which means chain armour. *Kusari jackets, hoods, gloves, vests, shin*, shoulder, *thigh guards*, and other armoured clothing were produced, even *kusari tabi* socks.

Kusari was used in **samurai armour** at least from the time of the Mongol invasion (1270s) but particularly from the Nambokucho period (1336–1392).^[27] The Japanese used many different weave methods including: a square 4-in-1 pattern (*so gusari*), a hexagonal 6-in-1 pattern (*hana gusari*) and a European 4-in-1 (*nanban gusari*).^[28] *Kusari* was typically made with rings that were much smaller than their European counterparts, and patches of *kusari* were used to link together plates and to drape over vulnerable areas such as the underarm.

Riveted kusari was known and used in Japan. On page 58 of the book *Japanese Arms & Armor: Introduction* by H. Russell Robinson, there is a picture of Japanese riveted kusari,^[29] and this quote from the translated reference of Sakakibara Kozan's 1800 book, *The Manufacture of Armour and Helmets in Sixteenth Century Japan*, shows that the Japanese not only knew of and used riveted kusari but that they manufactured it as well.

... karakuri-namban (riveted namban), with stout links each closed by a rivet. Its invention is credited to Fukushima Dembei Kunitaka, pupil, of Hojo Awa no Kami Ujifusa, but it is also said to be derived directly from foreign models. It is heavy because the links are tinned (biakuro-nagashi) and these are also sharp edged because they are punched out of iron plate^[30]

Butted and or split (twisted) links made up the majority of *kusari* links used by the Japanese. Links were either *butted* together meaning that the ends touched each other and were not riveted, or the *kusari* was constructed with links where the wire was turned or twisted^[31] two or more times, these split links are similar to the modern split ring commonly used on keychains. The rings were lacquered black to prevent rusting, and were always stitched onto a backing of cloth or leather. The kusari was sometimes concealed entirely between layers of cloth.^[32]

Kusari gusoku or chain armour was commonly used during the **Edo period** 1603 to 1868 as a stand-alone defence. According to George Cameron Stone

Entire suits of mail *kusari gusoku* were worn on occasions, sometimes under the ordinary clothing^[25]



Edo period Japanese (samurai) chain armour or kusari gusoku

Ian Bottomley in his book “Arms and Armor of the Samurai: The History of Weaponry in Ancient Japan” ^[33] shows a picture of a kusari armour and mentions *kusari katabira* (chain jackets) with detachable arms being worn by samurai police officials during the Edo period. The end of the samurai era in the 1860s, along with the 1876 ban on wearing swords in public, marked the end of any practical use for mail and other armour in Japan. Japan turned to a conscription army and uniforms replaced armour. ^[34]

48.5 Effectiveness



Mail byrnie from the Museum of Bayeux

Mail armour provided an effective defence against slashing blows by an **edged weapon** and penetration by thrusting and piercing weapons; in fact, a study conducted at the **Royal Armouries at Leeds** concluded that “it is almost impossible to penetrate using any conventional medieval weapon”^{[35][36]} Generally speaking, mail’s resistance to weapons is determined by four factors: linkage type (riveted, butted, or welded), material used (iron versus bronze or steel), weave density (a tighter weave needs a thinner weapon to surpass), and ring thickness (generally ranging from 18 to 14 gauge in most examples). Mail, if a warrior could afford it, provided a significant advantage to a warrior when combined with competent fighting techniques. When the mail was not riveted, a well placed thrust from a spear or thin sword could penetrate, and a **pollaxe** or **halberd** blow could break through the armour. In India, punching daggers known as **katars** were developed that could pierce the light butted mail used in the area. Some evidence indicates that during armoured combat, the intention was to actually get around the armour rather than through it—according to a study of skeletons found in **Visby**, Sweden, a majority of the skeletons showed wounds on less well protected legs.^[37]

The flexibility of mail meant that a blow would often injure the wearer,^[38] potentially causing serious bruising or fractures, and it was a poor defence against head trauma. Mail-clad warriors typically wore separate rigid **helms** over their mail coifs for head protection. Likewise, blunt weapons such as **maces** and **warhammers** could harm the wearer by their impact without penetrating the armour; usually a soft armour, such as **gambeson**, was worn under the hauberk. Medieval surgeons were very well capable of setting and caring for bone fractures resulting from blunt weapons.^[39] With the poor understanding of hygiene however, cuts that could get infected were much more of a problem.^[39] Thus mail armour proved to be sufficient protection in most situations.^{[40][41]}

48.6 Manufacture

Several patterns of linking the rings together have been known since ancient times, with the most common being the 4-to-1 pattern (where each ring is linked with four others). In Europe, the 4-to-1 pattern was completely dominant. Mail

was also common in East Asia, primarily Japan, with several more patterns being utilised and an entire nomenclature developing around them.

Historically, in Europe, from the pre-Roman period on, the rings composing a piece of mail would be **riveted** closed to reduce the chance of the rings splitting open when subjected to a thrusting attack or a hit by an arrow.

Up until the 14th century European mail was made of alternating rows of riveted rings and solid rings. After that point mail was almost all made from riveted rings only.^[42] Both were commonly made of **wrought iron**, but some later pieces were made of heat-treated steel. Wire for the riveted rings was formed by either of two methods. One was to hammer out wrought iron into plates and cut or slit the plates. These thin pieces were then pulled through a **draw plate** repeatedly until the desired diameter was achieved. **Waterwheel** powered drawing mills are pictured in several period manuscripts. Another method was to simply forge down an iron **billet** into a rod and then proceed to draw it out into wire. The solid links would have been made by punching from a sheet. Guild marks were often stamped on the rings to show their origin and craftsmanship. **Forge welding** was also used to create solid links, but there are few possible examples known, the only well documented example from Europe is that of the camail (mail neck-defence) of the 7th century **Coppergate helmet**.^[43] Outside of Europe this practice was more common such as “theta” links from India. Very few examples of historic butted mail have been found and it is generally accepted that butted mail was never in wide use historically except in Japan where mail (*kusari*) was commonly made from *butted* links.^[31]

48.7 Modern uses

48.7.1 Practical uses

Mail is used as protective clothing for butchers against meat-packing equipment. Workers may wear up to 8 pounds (3.6 kg) of mail under their white coats.^[44] Butchers also commonly wear a single mail glove to protect themselves from self-inflicted injury while cutting meat.

Woodcarvers sometimes use similar mail gloves to protect their hands from cuts and punctures.

The **British police** use mail gloves for dealing with knife-armed aggressors.

Scuba divers use mail to protect them from sharkbite, as do animal control officers for protection against the animals they handle. Shark expert and underwater filmmaker **Valerie Taylor** was among the first to develop and test the mail suit in 1979 while diving with sharks.

Mail is widely used in industrial settings as shrapnel guards and splash guards in metal working operations.

Electrical applications for mail include RF leakage testing and being worn as a faraday cage suit by tesla coil enthusiasts and high voltage electrical workers.^{[45][46]}

Stab-proof vests

Conventional textile based ballistic vests are designed to stop soft nosed bullets but offer little defense from knife attacks. Knife resistant armours are designed to defend against knife attacks, some of these use layers of metal plates, mail and metallic wires.^[47]

48.7.2 Historical re-enactment

Many **historical reenactment** groups, especially those whose focus is **Antiquity** or the **Middle Ages**, commonly use mail both as practical armour and for costuming. Mail is especially popular amongst those groups which use steel weapons. A modern hauberk made from 1.5 mm diameter wire with 10 mm inner diameter rings weighs roughly 10 kg (22 lb) and contains 15,000–45,000 rings.

One of the drawbacks of mail is the uneven weight distribution; the stress falls mainly on shoulders. Weight can be better distributed by wearing a belt over the mail, which provides another point of support.

Mail worn today for re-enactment and recreational use can be made in a variety of styles and materials. Most recreational mail today is made of butted links which are galvanized or stainless steel. This is historically inaccurate but is much less expensive to procure and maintain than historically accurate reproductions. Mail can also be made of

titanium, aluminium, bronze, or copper. Riveted mail offers significantly better protection ability as well as historical accuracy than mail constructed with butted links. Riveted mail can be more labour-intensive and expensive to manufacture. Japanese mail (*kusari*) is one of the few historically correct examples of mail being constructed with such *butted links*.^[31]

48.7.3 Decorative uses

Mail remained in use as a decorative and possibly high-status symbol with military overtones long after its practical usefulness had passed. It was frequently used for the *epaulettes* of military uniforms. It is still used in this form by the British *Territorial Army*, and the *Royal Canadian Armoured Corps* of the *Canadian Army*.

Mail has applications in sculpture and jewellery, especially when made out of precious metals or colourful *anodized* metals. Mail artwork includes headdresses, Christmas ornaments, chess sets, and jewelry. For these non-traditional applications, hundreds of weaves or patterns have been invented.^[48]

48.8 In film

In some films, knitted string spray-painted with a metallic paint is used instead of actual mail in order to cut down on cost (an example being *Monty Python and the Holy Grail*, which was filmed on a very small budget). Films more dedicated to costume accuracy often use *ABS plastic* rings, for the lower cost and weight. Such ABS mail coats were made for *The Lord of the Rings* film trilogy, in addition to many metal coats. The metal coats are used rarely because of their weight, except in close-up filming where the appearance of ABS rings is distinguishable. A large scale example of the ABS mail used in the *Lord of the Rings* can be seen in the entrance to the *Royal Armouries* museum in Leeds in the form of a large curtain bearing the logo of the museum. It was acquired from the makers of the film's armour, *Weta Workshop*, when the museum hosted an exhibition of WETA armour from their films. For the film *Mad Max Beyond Thunderdome*, Tina Turner is said to have worn actual mail and she complained how heavy this was.

48.9 Gallery

- Edo period 1800s Japanese (samurai) chain socks or *kusari tabi*
- Japanese Edo period mail jacket *kusari katabira*.
- Edo period Japanese (samurai) mail gauntlets *kusari han kote*.
- A rare example of Japanese riveted mail.
- Examples of Edo period Japanese (samurai) mail *kusari*.
- Close up of Mughal riveted mail and plate coat *zirah Bagtar*.
- Close up detail of Mughal riveted mail hood *kulah zirah*.
- Mughal riveted mail and plate coat *zirah Bagtar*.
- Mughal riveted mail hood *kulah zirah*.
- A suit of mail on display at the *Deutsches Historisches Museum* in Berlin.
- "David rejects the unaccustomed armour" (detail of fol. 28r of the 13th century *Morgan Bible*). The image depicts a method of removing a *hauberk*.
- Indian theta link mail (bar link mail), 17th century.
- Ottoman riveted mail, 16th century.
- European riveted mail.

48.10 See also

Mail-based armours

(made from mail)

- Lorica hamata
- Lorica plumata with scales attached to a backing of mail
- Hauberk
- Plated mail
- Tatami (Japanese armour)
- Banded mail
- Kusari (Japanese mail armour)

Armours supplementary to mail

(typically worn under mail armour:)

- Gambeson (Also known as quilted armour or a padded jack)

(can be worn over mail armour)

- Mirror armour (supplementary oriental plates worn with mail)
- Scale armour
- Lamellar armour
- Coat of plates
- Brigandine
- Splint armour
- Transitional armour

others

- Ring armour
- Cataphract
- Proofing (armour)

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48.12 External links

- [Erik D. Schmid/The Mail Research Society](#)
- [The Treatment of Mail on an Arm Guard from the Armoury of the Shah Shuja: Ethical Repair and in situ Documentation in Miniature](#)
- [Excavated lorica hamata](#)
- [Mailers Worldwide](#) - weaves/tutorials/articles, and gallery photos
- [The Maille Artisans International League \(MAIL\)](#) – Hundreds of weaves/tutorials/articles, and gallery pictures
- [“Mail: Unchained”](#), an article taking an in-depth look at the construction and usage of European chainmail
- [Construction tips](#)
 - [Butted mail: A Mailmaker’s Guide](#)
 - [The Ringinator](#) - Tool for making jump rings
 - [The Apprentice Armorer’s Illustrated Handbook For Making Mail](#)
 - [The Ring Lord Chainmail Discussion Forum](#)
 - [Phong’s Chainmaille Tutorials](#)
 - [Ring Guide](#) – Sizing Specialty Square Rings to Round Weaves
- [Ancient Roman originals can be seen on the pages of the Roman Military Equipment Web museum, Romancoins.info](#)
- <http://artofchainmail.com/patterns/european/index.html>
- <http://www.iranicaonline.org/articles/armor-ii>
- [Learn all about making Chain Maille](#)

Der Panckermächer.
 Verwahrt das Hert, bey zeit, ehe sich anhebt der Streit.



Ruff! die Versuchung bläst zu Feld,
 und will das Hert, durch starckes Geld,
 durch Ehr' und fleisches Lust betriegen.
 zieht an die Treue gegen Gott
 darin dieser Pancker macht zu Spott,
 der feinde List und hilfft uns siegen.

Quelle: Deutsche Fotothek

A manuscript from 1698 showing the manufacture of mail



Neptunic shark suit



Roman soldier 175 a.C. from a northern province, (re-enactment).



Major's shoulder chains



A modern example of the use of mail, a bracelet using the roundmaille weave.

Chapter 49

Breastplate

For the riding equipment used on horses, see **Breastplate (tack)**.

A **breastplate** is a device worn over the torso to protect it from injury, as an item of religious significance, or as an item of status. A breastplate is sometimes worn by mythological beings as a distinctive item of clothing.

49.1 Armour

In medieval weaponry, the breastplate is the front portion of **plate armour** covering the torso. It has been a military mainstay since ancient times and was usually made of leather, bronze or iron in antiquity. By around 1000 AD, solid plates had fallen out of use in Europe and knights of the period were wearing **chain mail** in the form of a **hauberk** over a padded tunic.^[1] Plates protecting the torso reappeared during the 13th century in the form of the **cuirass** or alternatively as plates directly attached to a knightly garment known as the **surcoat**.^[1] Around 1300 this developed into the **Coat of Plates** which continued to be in use for about a century.^[1] True breastplates reappear in Europe in 1340 first composed of wrought iron and later of steel.^[2] They were between 1 mm and 2.5 mm thick.^[2] In order to prevent the wearer from being cut by their own armour, the design featured outward turned edges that also increased stiffness.^[2] In some cases, further strength was added by a ridge running down through the centre of the plate.^[2] These early breastplates only covered the upper torso with the lower torso not being protected by plate until the development of the **fauld** around 1400.^[2] Around 1450, the breastplate had expanded to cover the entire torso and could consist of one or two plates.^[3] The French term *pancier*, which became English *pauncher* and German *panzer*, was also used.

Bullet-proof vests are the modern descendant of the breastplate.



Breastplate and helmet of the French Horse Carabinier, during the Bourbon Restoration (1816–1824)



A 15th-century Gothic breastplate, with tassets



New-made replicas of a 17th-century helmet, two breastplates, **tassets**, a **halberd** and two military marching drums

49.2 Biblical

Main article: **Priestly breastplate**

A “breastplate” or “breastpiece” was among the clothes of the **Jewish High Priest**. In the **Bible**, the word 'breastplate' is used figuratively to describe protecting oneself from unrighteousness (cf. **Isaiah 59:17**, **Ephesians 6:14**, etc.).

49.3 Classical mythology

Both **Zeus** and **Athena** are sometimes depicted as wearing a goatskin shield or breastplate called an **Aegis**. At the center of Athena’s shield was the head of **Medusa**.

49.4 Native American use

The hair-pipe breastplates of 19th-century Plains Indians were made from the West Indian **conch**, brought to New York docks as ballast and then traded to native Americans of the upper **Missouri River**. Their popularity spread rapidly after their invention by the **Comanche** in 1854. They were too fragile and expensive to be considered armour, and were instead a symbol of wealth during the economic depression among **Plains Indians** after the **buffalo** were almost exterminated.^[4]

49.5 See also

- **Armour**
- **Cuirass**
- **Lance rest**
- **Linothorax**
- **Pteruges**

49.6 References

- [1] Walker, Paul F (2013). *The history of armour 1100-1700*. Crowood press. pp. 36–38. ISBN 9781847974525.
- [2] Walker, Paul F (2013). *The history of armour 1100-1700*. Crowood press. pp. 39–41. ISBN 9781847974525.
- [3] Walker, Paul F (2013). *The history of armour 1100-1700*. Crowood press. p. 43. ISBN 9781847974525.
- [4] David E. Jones (2004). *Native North American Armor, Shields, and Fortifications*. Austin, TX: University of Texas. pp. 42–44. ISBN 0-292-70170-5.

49.7 External links

Media related to **Breastplates** at Wikimedia Commons



Man's Breastplate, Crow (Native American), 1880-1900, Brooklyn Museum



Left Hand Bear, an Oglala Lakota chief, wearing a hair-pipe breastplate, Omaha, 1898.

Chapter 50

Codpiece

A **codpiece** (from **Middle English**: *cod*, meaning "scrotum") is a covering flap or pouch that attaches to the front of the crotch of men's **trousers** and usually accentuates the **genital** area. It was held closed by string ties, buttons, or other methods. It was an important item of **European clothing** in the 15th and 16th centuries, and is still worn in the modern era in performance costumes for rock music and metal musicians and in the **leather subculture** while an **Athletic cup** protects in a similar fashion.

50.1 History

From the ancient world there are extant depictions of the codpiece; for example, archaeological recovery at **Minoan Knossos** on **Crete** has yielded **figurines**, some of which wear a codpiece.^[1] Most of what is objectively known about the cut, fit, and materials of Renaissance clothing is learned from realistic portraits, clothing inventories, descriptive receipts for payments of artifacts, or tailors' cutting guides.^[2] In the 14th century, men's **hose** were two separate legs worn over linen **drawers**, leaving a man's genitals covered only by a layer of linen. As the century wore on and men's **hemlines** rose, the hose became longer and joined at the centre back but remained open at the centre front. The shortening of the cote or **doublet** resulted in under-disguised genitals, so the codpiece began life as a triangular piece of fabric covering the gap.

As time passed, codpieces became shaped and padded to emphasize rather than to conceal, reaching their peak of size and decoration in the 1540s before falling out of use by the 1590s. Scholars have noted that the appearance of Renaissance codpiece was coincident with aggressive spread of **syphilis** in the early 16th century, and suggest that it may have first served to allow extra room in the clothing for bandages or other dressings for the afflicted male member.^{[3][4]} Armor of the 16th century followed civilian fashion, and for a time armored codpieces were a prominent addition to the best full harnesses. A few of these are on display in museums today: the **Metropolitan Museum of Art** in **New York City** has one, as does the Higgins Armory^[5] in **Worcester, Massachusetts**; the armor^[6] of **Henry VIII** in the **Tower of London** has a codpiece. In later periods, the codpiece became an object of the derision showered on outlandish fashions. Renaissance humorist **François Rabelais** jokingly refers to a book titled *On the Dignity of Codpieces* in the foreword to his book *The Histories of Gargantua and Pantagruel*.^[7]

Through the same linguistic route, *cods* became a modern slang term for the male genitalia.

50.2 In contemporary culture

50.2.1 Subcultural attire

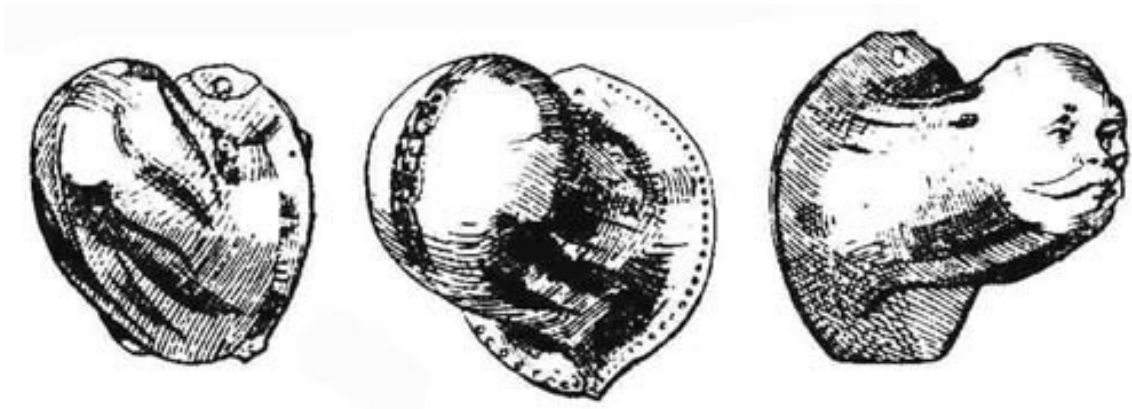
Resembling codpieces, **jock straps** made of leather can be worn in **leather subcultural** attire to cover and confine the genitals of a man, sometimes while wearing leather **chaps**. Rather than accentuating the male genitalia through exaggeration of the size of the wearer's endowment, attention can be drawn through decorative adornment such as metallic studs.



Portrait of Antonio Navagero (1565), oil on canvas, Pinacoteca di Brera, Milan, by Giovanni Battista Moroni

50.2.2 Heavy metal fashion

The codpiece crossed over from the leather subculture to become an established part of heavy metal fashion performance costume when Rob Halford, of the band Judas Priest, began wearing clothing adopted from the gay biker and leather subculture while promoting the *Killing Machine* (AKA *Hell Bent for Leather*) album in 1978.^[8] Ian Anderson, frontman for Jethro Tull, wore a codpiece during his performances in the mid-1970s. Gene Simmons of the American rock band Kiss often wore black and silver costumes with codpieces. Shock rock performer Blackie Lawless, leader of the group W.A.S.P., wore a codpiece that featured a saw blade. Heavy metal singer King Diamond has been known to wear a codpiece as part of his performance outfits. Electric Six lead singer Dick Valentine can be seen wearing a brightly flashing codpiece in the music video for the band's 2003 hit single "Danger! High Voltage". Metal singer Till Lindemann of Rammstein occasionally wears codpieces on stage.



Metal codpieces, 16th century



Leather codpiece

Black metal musician and Satanist **Infernus** wore a codpiece as part of his attire during the *Ad Majorem Sathanas Gloriam* era of Gorgoroth. **William Murderface** from the cartoon series *Metalocalypse* also wears a codpiece on several occasions. Alice Cooper regularly wears bright red codpieces in concert. GWAR frontman Oderus Urungus wore a codpiece called *The Cuttlefish of Cthulhu*.



Oderus Urungus of metal band GWAR wearing a codpiece in a 2004 concert

50.2.3 Pop music

Cameo frontman **Larry Blackmon** sports a codpiece in his videos “Word Up” and “Candy”, which became his trademark. **Guns N' Roses** frontman **Axl Rose** wore a codpiece for most of the **Appetite for Destruction Tour**.

50.3 See also

- **Koteka**
- **Willy warmer**
- **1500–1550 in fashion**
- **1550–1600 in fashion**

50.4 References

Notes

- [1] C. Michael Hogan. 2007. *Knossos fieldnotes*, *Modern Antiquarian*.
- [2] Grace Q. Vicary, *Cultural Anthropology*, Vol. 4, No. 1 (Feb., 1989), Visual Art as Social Data: The Renaissance Codpiece, pp. 3-25.
- [3] Grace Q. Vicary, *Cultural Anthropology*, Vol. 4, No. 1 (Feb., 1989), Visual Art as Social Data: The Renaissance Codpiece, pp. 10-19.
- [4] C. S. Reed, “Internal Medicine Journal”, Vol 34, No. 12 (2004), The codpiece: social fashion or medical need?, pp. 684-686
- [5] John Grabenstein, <http://www.higgins.org> .
- [6] David Edge, *Arms and Armor of Medieval Knights: An Illustrated History of Weaponry in the Middle Ages*.
- [7] “Worlds of the Renaissance 2000 - Dina McArdle Project”. Albertrabil.com. Retrieved 2012-01-19.
- [8]

Further reading

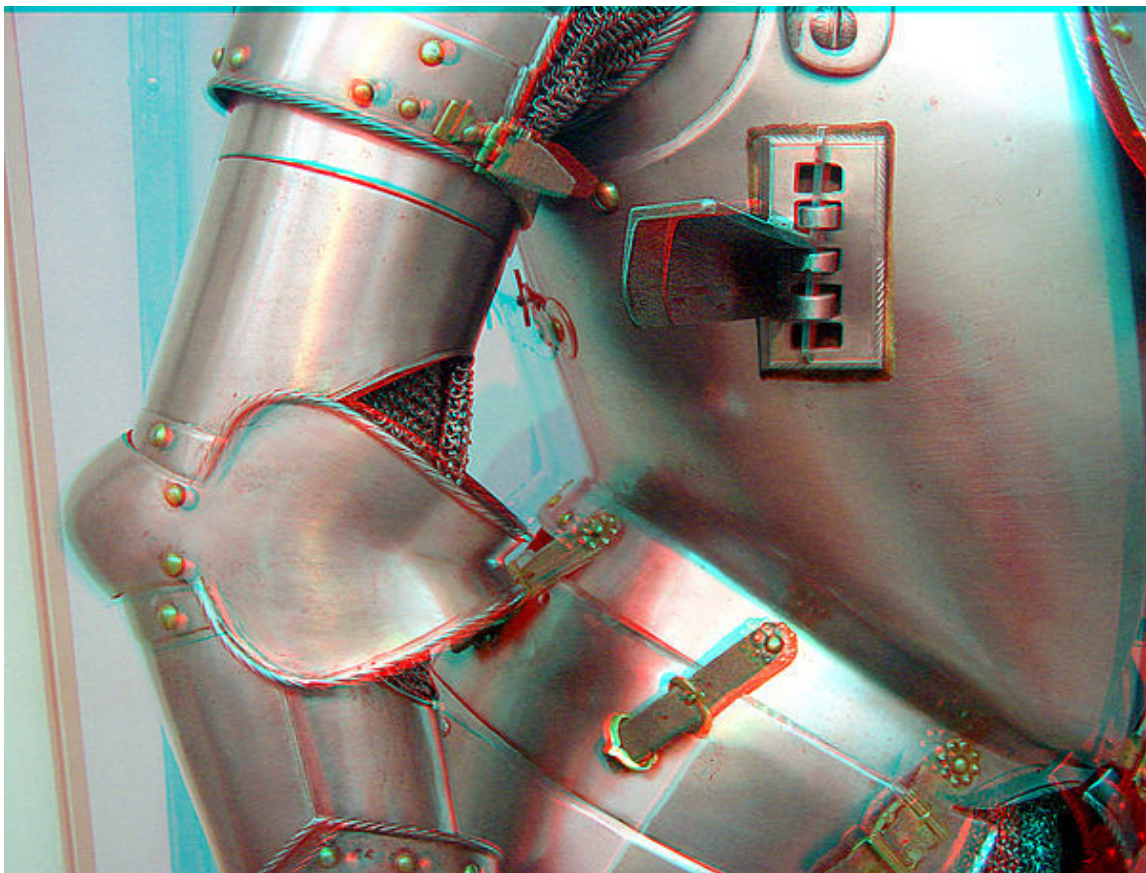
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- Hearn, Karen, ed. *Dynasties: Painting in Tudor and Jacobean England 1530–1630*. New York: Rizzoli, 1995. ISBN 0-8478-1940-X.
- Bodemer, Brett: "Pantagruel's Seventh Chapter:The Title as Suspect Codpiece."

50.5 External links

- Media related to **Codpieces** at Wikimedia Commons

Chapter 51

Lance rest



3D red cyan glasses are recommended to view this image correctly. Cuirass showcasing a lance rest on the right side: note the hinged construction

A **lance rest** (also known as an *arrêt de cuirasse* or, more simply, an *arrêt*) is a metal flange that is typically attached to the right side of a **breastplate**, just under the armpit. The lance rest appeared in the late 14th century, remaining in use until plate armor in general became disused.^[1]

The usage of a lance rest can be more readily gleaned by looking at the French term “arrêt”, or “arrest”. The lance rest was not used to simply hold the weight of the lance, as the English name might suggest, but to arrest the rearward movement of the weapon.^[1] This would allow the wielder of the lance to couch the weapon more securely, thus delivering a more solid blow to his target while lessening the chance of injury to himself. The lance rest achieves this by spreading the impact of a blow through the breastplate to the torso of the wearer, thus redirecting the force of the blow away from the hand, wrist, elbow, and shoulder.^[1] A ring of leather around the handle of the lance, placed behind the hand but before the armpit or lance rest and typically known as a *grapper*^[2] or *arrêt de lance*, is used to

further secure the lance in its couched position. When used in conjunction, the lance rest and grapper are able to stabilize the lance considerably when it is in its couched position.^[2]

The lance rest is typically bolted^[3] to the side of the breastplate or secured through the use of metal tabs known as staples.^[4] The majority of the time, the lance rest is hinged so that it can be folded upward to prevent an obstruction of the wearer's sword arm once the lance has been abandoned in favor of a sword.^[1]

51.1 References

- [1] "Arms and Armor—Common Misconceptions and Frequently Asked Questions | Thematic Essay | Heilbrunn Timeline of Art History | The Metropolitan Museum of Art". Metmuseum.org. Retrieved 2011-03-14.
- [2] "Mounted Combat: Weapons". Classicalfencing.com. 2006-03-26. Retrieved 2011-03-14.
- [3] "Encyclopedia of historical weapons - Lance rest". Armouronline.com. Retrieved 2011-03-14.
- [4] "Milanese Pauldron and Lance Rest". Age of Armour. Retrieved 2011-03-14.

Chapter 52

Coat of plates

A **coat of plates** is a form of torso **armour** consisting of metal plates sewn or riveted inside a cloth or **leather** garment. The coat of plates makes a fairly brief appearance in the history of European armour during the era of **transitional armour**, during a portion of the 14th century. The coat of plates was normally worn with a **mail hauberk** and a helmet.

52.1 Construction

The plates number anywhere from eight or ten to the hundreds depending on their size. The plates overlap, usually only enough to guarantee full coverage even when moving around and fighting. The coat of plates is similar to several other armours such as **lamellar**, **scale** and **brigandine**. Unlike scale armour which has plates on the outside or **splint armour** in which plates can be inside or outside, a coat of plates has the plates on the inside of the foundation garment. It is generally distinguished from a brigandine by having larger plates, though there may be no distinction in some examples.

52.2 Visby armour

One of the best resources about coats of plates are the **mass graves** from the **Battle of Visby**. The Visby coats of plates display between 8 and some 600 separate plates fastened to their backings.^[1] The mass grave from a battle in 1361 has yielded a tremendous number of intact armour finds including 24 distinct patterns of coat of plates style armour. Many of these were older styles similar to the armoured surcoat discussed below.

52.3 Terra Cotta Army

Coat of plates armor (along with lamellar) is also seen among the **Terracotta Army** - soldiers representative of the **Qin Dynasty** in ancient China.

52.4 Development

The coat of plates likely developed from the armoured surcoat, such as seen on the 1250 St. Maurice coat. These consisted of metal plates rivetted to the inside of a **surcoat**. There is debate regarding whether the plates inside the armoured surcoat overlapped; but the armour is otherwise similar. This type of armour is also documented in Norse written sources from around 1250: the **Konungs skuggsjá** calls it a *Briost Bjorg* and specifies that it should cover the area between the nipples and the belt, and the later **Hirdskraa** of the 1270s calls it a *Plata*. The former source informs us that the armour should be worn beneath the **hauberk**, which can explain why this form of armour so seldom appears in illustrations and statuary before the late 13th century.



16th century Jack of plate consisting of iron plates sewn to a leather jerkin. "Jack" was a late-medieval name for jacket.

This armor was improved in the 15th century, being altered to resemble a contemporary doublet. This version of the coat of plates, studded with **rivets**, was known as a **brigandine**. The name is derived from "brigand," the name for a common soldier, many of whom would become **bandits** to survive after the war ended.^[2]

The coat or **Jack of plates** remained in use until the end of the 16th century. It was identical to contemporary brigandines although the metal plates were sewn in place rather than riveted. Jacks were often made from recycled pieces of older **plate armor**, including damaged brigandines and **cuirasses** cut into small squares^[3] Although the coat



Inside view of an Italian brigandine dated 1470

of plates was obsolete by the time of the English Civil War many were taken to the New World by the Pilgrim Fathers as they provided excellent protection from Indian arrows; one dating back to 1607 was recently found at Jamestown.^[4]

52.5 See also

- Scale armour
- Lamellar armour
- Brigandine

52.6 Notes

[1] Thordeman, *Armour from the Battle of Wisby, 1361*, 211

[2] (a) ^ Edge and Paddock. *Arms and Armour of the Medieval Knight*. Saturn Books, London, 1996.

[3] Jack of plates: Evidence of recycling

[4] Archaeologists uncover jack of plate at Jamestown

52.7 References

- Edge, David; John Miles Paddock (1993) [1988]. *Arms & Armor of the Medieval Knight* (Crescent Books reprint ed.). New York: Crescent Books. ISBN 0-517-10319-2.

- Thordeman, Bengt (2001) [1939]. *Armour from the Battle of Wisby, 1361* (The Chivalry Bookshelf reprint ed.). The Chivalry Bookshelf. ISBN 1-891448-05-6.
- Counts, David. “Examination of St. Maurice Coat of Plates”, The Arador Armour Library, retrieved 3/22/07

52.8 External links

- Reconstructed examples of 25 coat of plate armours from the Visby find

Chapter 53

Jack of plate

A **jack** or **jack of plate** is a type of armour made up of small iron plates sewn between layers of felt and canvas.

The jack is similar to the **brigandine**. The main difference is in the method of construction: a brigandine is riveted whereas a jack is sewn.

Jacks of plate were created by stitching small overlapping squares of iron in between two canvases. The garments weighed about 17 pounds, which made them much more pleasing to wear than solid breastplates. They allowed soldiers with weapons to rest the butts of the weapons firmly against their shoulders, which wasn't feasible with smooth surface plate armours. Primarily, they were used in Europe during the medieval times. The present day equivalent of a jack of plate is a bullet-proof vest.^[1]

53.1 References

- [1] Jack of Plate | http://historicjamestowne.org/news/jack_plate.php



Jack of plate, English or Scottish, c1590



Jack of plate, English, c1580-90



Making a Jack of Plate

Chapter 54

Ailette

For a river in France, see [Ailette \(river\)](#).

The **aillette** (French language for *little wing*) was a component of thirteenth century [knightly armour](#). Usually made of [cuir bouilli](#) (sometimes of [plate](#) or [parchment](#)), ailettes were thick, quadrangular pieces of leather or wood that attached to the shoulders by means of silk or leather cord. Ailettes were usually flat and nearly rectangular in shape, and usually decorated with [heraldic](#) designs.

Ailettes made brief appearances between 1290 and 1325 before giving way to more protective joint plates that covered the joint gap in the shoulders.

The purpose of ailettes is a matter of disagreement amongst scholars. Some, such as [Charles ffoulkes](#), claim that they enhanced protection to the neck, while others, like [Ewart Oakeshott](#), argue that they were used primarily for decorative and heraldic reasons.

54.1 External links

- [Arador Armor Library](#) description of ailettes
- [Ailettes revisited](#) a comparison of heraldic and defensive functions of ailettes
- A brief assorted reference on ailettes and other plate armor



Chapter 55

Bases (fashion)

Bases are the cloth military skirts (often part of a **doublet** or a **jerkin**),^[1] generally richly embroidered, worn over the armour of later **men-at-arms** such as French **gendarmes** in the late 15th to early 16th century, as well as the plate armour skirt later developed in imitation of cloth bases for supplemental upper-leg protection, worn by men-at-arms for foot combat.

55.1 Cloth bases

Italian armoured cavalry had been wearing bases, with or without a jerkin or vest for the chest as well, since the late 15th century. It appears that French gendarmes picked up the fashion in their interventions in Italy during the **Italian Wars**. Adopted by the French sometime after 1495, the fashion soon spread throughout Europe, and may be seen in illustrations throughout the Italian Wars. Such bases were knee-length and cartridge-pleated.^[2] Such skirts eventually evolved into quilted or padded breeches worn in the early 17th century.^[3]

55.2 Plate armour bases

Plate armour for the upper legs, in imitation of the shape and style of cloth bases, came into fashion in the middle of the sixteenth century as well, and was also called “bases” as well as tonlet. It was worn for dismounted combat. There was a detachable rear piece for the steel bases to allow the man-at-arms to sit on his horse, although even without such rear piece it must have been rather difficult to mount and dismount when wearing plate armour bases.^[4]

55.3 Notes

[1] Gravett, Christopher. *Tudor Knight*. Oxford: Osprey Publishing, 2006. P. 59.

[2] Baker, Georgia, and Pullen, Helen Redel. *A Handbook of Costume Drawing: A Guide to Drawing the Period Figure for Costume Design Students*. Focal Press, 2000. P. 76.

[3] Peterson, Harold Leslie. *Arms and Armor in Colonial America, 1526-1783*. Toronto: Dover Publications, 2000. P. 140.

[4] Garddner, J. Starkie. *Armour in England from the Earliest Times to the Seventeenth Century*. London, Seeley & Co. Ltd. 1898. P. 70.



French **gendarmes** wearing bases as part of a doublet – bases composed only of a skirt (that is, from the waist down) were very common as well.

Chapter 56

Benty Grange Helmet

Coordinates: 53°03'19"N 1°53'56"W / 53.055299°N 1.898832°W



The Benty Grange Helmet on display in the Weston Park Museum

The **Benty Grange helmet** is an archaeological artefact excavated by Thomas Bateman in 1848 from an Anglo-Saxon tumulus (or *barrow*) at the Benty Grange Farm in the civil parish of Monyash in the English county of Derbyshire.

The remains and a reconstruction are in Sheffield's Weston Park Museum.

This helmet is of the Spangenhelm type and like the Pioneer helmet is boar-crested. The surviving iron bands would

have supported plates of horn (decayed in antiquity) held in place with small silver rivets^[1] and the nasal of the helmet is decorated with a silver cross.

56.1 Boar Crest



Detail of the Boar shaped crest.

This helm is crested with an iron boar with bronze eyes inset with garnet, this sits upon an elliptical copper-alloy plate. The hips of the boar are made with pear shaped plates of gilded silver.^[2] The 1986 reconstruction, based on conservation work carried out at the [British Museum](#) has boar bristles running along the back.^[3]

In Norse mythology, the boar talisman was associated with Freyja's role as battle goddess, helmets with boar-crests are described in the Anglo-Saxon poem *Beowulf*.

56.2 References

- [1] Bateman, T (1861). *Ten Years' Digging in Celtic and Saxon Grave Hills, in the counties of Derby, Stafford, and York, from 1848 to 1858; with notices of some former discoveries, hitherto unpublished, and remarks on the crania and pottery from the mounds*. London: John Russell Smith. Retrieved 14 November 2010.
- [2] Bruce-Mitford, R; Luscombe, M R (1974). *Aspects of Anglo-Saxon archaeology. Sutton Hoo and other discoveries*. London: Victor Gollancz Limited. pp. 223–252. ISBN 0-575-01704-X.
- [3] "Museums Sheffield". Retrieved 14 November 2010.

56.3 External links

- The 'Museums Sheffield' page for this object

Chapter 57

Brocas helm

For the American metal band, see [Brocas Helm \(band\)](#).

The **Brocas helm** is a [jousting helm](#) on display at the [Rotunda](#) as part of the [Tower of London](#) armoury collection. It was commissioned by an English knight from an Italian armourer.^[1]

It is named after the Anglo-Norman Brocas family of [Beaurepaire, Hampshire](#) descending from the knight Sir [Barnard Brocas](#) (1330–1395). The collection of the family was auctioned after the death of a later Barnard Brocas, as the “Brocas Sale” in 1834.^{[2][3]}

57.1 References

- [1] European Armour in the Tower of London Arthur Richard Dufty, Great Britain. Ministry of Public Building and Works - 1968- Page 12 "... the headpieces were two of outstanding quality and importance: the Brocas helm and the close helmet now numbered IV. 412. The Brocas helm, an English jousting helm, named after an erstwhile owner, helped to fill a serious gap in the ..."
- [2] *The Penny Magazine of the Society for the Diffusion of Useful Knowledge* Volume 9 - Page 96 Charles Knight - 1840 “Only two of the visored bascinets of this period are known to exist, one in the Meyrick collection, the other in the Tower of London. The latter was added to the National Collection in the year 1834.”
- [3] Heroic Armor of the Italian Renaissance Stuart W. Pyhrr, José A. Godoy - 1998 Page 184 “The earliest reference to this helmet occurs in the sale catalogue of the Brocas collection in 1834, in which the inscription on the brow plate is cited.⁴ The helmet was subsequently acquired by the eighth duke of Luynes, who formed in the ..”

Chapter 58

Combat helmet

A **combat helmet** or **battle helmet** is a type of **personal armor** designed specifically to protect the head during combat.

Helmets are among the oldest forms of **personal protective equipment** and are known to have been worn by the Akkadians/Sumerians in the 23rd century BCE, Mycenaean Greeks since the 17th century BCE,^{[1][2]} the Assyrians around 900 BCE, **ancient Greeks** and **Romans**, throughout the **Middle Ages**, and up to the end of the 17th century by many combatants.^[3] Their materials and construction became more advanced as weapons became more and more powerful. Initially constructed from **leather** and **brass**, and then **bronze** and **iron** during the **Bronze** and **Iron Ages**, they soon came to be made entirely from forged **steel** in many societies after about 950 CE. At that time, they were purely military equipment, protecting the head from cutting blows with **swords**, flying **arrows**, and low-velocity **musketry**.

Military use of helmets declined after 1670, and rifled **firearms** ended their use by foot soldiers after 1700^[3] but the Napoleonic era saw ornate cavalry helmets reintroduced for **cuirassiers** and **dragoons** in some armies which continued to be used by French forces during **World War I** as late as 1915.^[4]

World War I and its increased use of artillery had renewed the need for steel helmets, with the French **Adrian helmet** and the British **Brodie helmet** being the first modern steel helmets used on the battlefield,^{[5][6]} soon followed by the adoption of similar steel helmets, such as the **Stahlhelm**^{[7][8][9]} by the other warring nations. In the 20th century, such helmets offered protection for the head from shrapnel and fragments as well as for specialist roles such as **Paratrooper helmets**.^[10]

Today's militaries often use high quality helmets made of ballistic materials such as **Kevlar** and **Aramid**, which offer improved protection. Some helmets also have good non-ballistic protective qualities, against threats such as concussive **shock waves** from **explosions**.^{[11][12]}

Many of today's combat helmets have been adapted for modern warfare requirements and upgraded with **STANAG rails** to act as a platform for mounting cameras, video cameras and VAS Shrouds for the mounting of Night Vision Goggles (NVG) and monocular Night Vision Devices (NVD).

Beginning in the early 20th century, combat helmets have often been equipped with **helmet covers** to offer greater camouflage. There have been two main types of covers, mesh nets were earlier widely used, but most modern combat helmets use camouflage cloth covers instead of the earlier net covers.

58.1 History

58.1.1 Current

- A Mk. 6 Helmet, issued to British military personnel during the very later part of the 20th Century.
- A modern **German Army Gefechtshelm**
- **United States** soldier wearing the standard issue **Advanced Combat Helmet**.
- A US special operations Marine Ops-Core helmet, showing modern battlefield accessories such as NVG mounts, communications gear and a helmet camera.

58.1.2 World War I – Vietnam War

- The French infantry M15 **Adrian helmet** was the first modern steel helmet.
- German M16 **Stahlhelm**.
- **US Marine Corps M1917** (after the Brodie helmet).
- Swiss Model 1918 helmet
- A side view of a Mid-century M1 helmet

58.1.3 Medieval and early Modern

- 6th century Spangenhelm

See also headgear listing within **Components of medieval armour**.

58.1.4 Ancient militaries

- **Mycenaean Greek** boar tusk helmet, **Mycenae**, 14th century BCE
- **Ancient Greek** bronze **Corinthian** helmet, c. 500 BCE, **Staatliche Antikensammlungen** (Inv. 4330)
- Persian helmet (Sassanid army)
- 17th century Safavid helmet (Safavid army)

58.1.5 Padding

Cushioning is used to negate concussive injuries. Researchers at the Lawrence Livermore National Laboratory published a study in 2011 that concluded that the addition of an eighth of an inch of cushion decreased the impact force to the skull by 24%.^[38]

58.2 References

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- [4] Heaumes Page
- [5] Military Trader
- [6] Military headgears
- [7] German-Helmets.com
- [8] Axis History Factbook: A brief history of the German Stahlhelm
- [9] German Pickelhaube Spiked Helmet Evolution Guide
- [10] Index CEF Helmets
- [11] Kevlar Pasgt Helmet
- [12] <http://www.operation-helmet.org>
- [13] MSA: Casques Militaires
- [14] Advanced Combat Helmet (ACH)



"Indian Helmet, Shield and Swords," a print by Day and Sons, London, c.1858

- [15] ACH
- [16] US Military Taking Delivery of Advanced Combat Helmets
- [17] The Warrior
- [18] PLCE and Body Armour

- [19] Šestan - Busch d.o.o. (Ltd)
- [20] <http://www.grupoinbra.com.br/inbraland.php>
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- [22] Canada
- [23] <http://www.nahelmets.com.ar/>
- [24] <http://www.operation-helmet.org/usaf.html>
- [25] Department Of The Air Force
- [26] Sistema Compositi SEPT-2 PLUS helmet
- [27] Sistema Compositi SUPERUBOTT helmet
- [28] Tecnoplast TD-71 riot control helmet
- [29] pl:Hełm wz. 93
- [30] Mile Dragić Production M-97S/P
- [31] Mile Dragić Production M-05S/P
- [32] Българските Военни Каски
- [33] Home of the M-1 Helmet
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- [36] Simon Coupland, "Carolingian Arms and Armor in the Ninth Century", (accessed 10 March 2006).
- [37] lookup=Hdt.+4.180.1 Herodotus, The Histories (ed. A. D. Godley)
- [38] regg Zoroya (17 April 2911). "Larger helmet could guard against brain injury to troops". USA TODAY. Retrieved 17 April 2011. Check date values in: |date= (help)

58.3 External links

- Modern military helmets

Chapter 59

Coppergate Helmet

Coordinates: 53°57′39″N 1°04′59″W / 53.960934°N 1.083183°W

The **Coppergate Helmet** (also known as **York Helmet**) is an 8th-century **Anglo-Saxon** helmet found in **York**. It is remarkably well preserved and is one of only four Anglo-Saxon helmets discovered to date. The partial remains of a fifth helmet were found in the **Staffordshire Hoard**.

59.1 Construction

Like many other helmets of Germanic Western and Northern Europe in the Early Middle Ages the construction of Coppergate helmet is derivative of **Late Roman helmet types**.^[1]

It has a rounded composite skull, the iron elements making up the skull are riveted together. Two deep cheek-pieces are attached to the skull by hinges. A mail curtain (**camail**) is attached to the lower rim of the helmet behind the cheek-pieces to defend the wearer's neck and an unusually large nose-guard (**nasal**) provided facial protection. The mail is remarkable in consisting of forge-welded links, rather than the far more common riveted links.^[2] It is richly decorated with brass ornamentation. On analysis, the helmet was found to be made of iron, with applied brass-work containing approximately 85 percent copper.^[3] Its basic construction is almost identical to another surviving Anglo-Saxon helmet, the **Pioneer helmet**. It is also very like the helmets depicted being worn by Anglo-Saxon **Northumbrian** cavalrymen on one of the **Pictish Aberlemno Sculptured Stones**, believed to depict the **Battle of Dun Nechtain** of 685.^[4]

59.2 Decoration

The helmet has two low crests of brass, one running from front to back the other from side to side, forming a cross shape when viewed from above. The brass banding within the crests bears a Latin inscription:

IN NOMINE : DNI : NOSTRI : IHV : SCS : SPS : DI : ET : OMNIBVS : DECEMVS : AMEN : OSHERE : XPI

“In the name of our Lord Jesus, the Holy Spirit and God; and to all we say **Amen** / **Oshere** / Christ”

An alternative interpretation suggests the following translation:

“In the name of our Lord Jesus Christ and of the Spirit of God, let us offer up **Oshere** to All Saints. **Amen**.”^[5]

Oshere is a male Anglian name and XPI are the first three letters of the word Christos Χριστός (*khristos*) in Greek.^[3]

The brass crest terminates in a decorative animal head at the base of the nasal. The brass eyebrow decorations which flank the nasal also terminate in animal heads. The decoration of the nasal itself consists of two intertwined beasts, whose bodies and limbs degenerate into interlace ornament.^[6]



Northumbrian cavalrymen (right) wearing helmets remarkably similar to the Coppergate Helmet. Pictish memorial stone at Aberlemno.

59.3 Discovery and conservation

The helmet had been hidden in a well found near what is now the **JORVIK Viking Centre**, and was damaged as it was uncovered by a mechanical digger in 1982. It is now in the **Yorkshire Museum**.^[7]

59.4 References

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- [2] D. Tweddle, *The Anglian Helmet from Coppergate*, Archaeology of York 17/8, York Archaeological Trust 1992
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- [7] Tweddle, Dominic (1992). *The Anglian Helmet from Coppergate*. Council for British Archaeology.

59.5 See also

- Viking Age arms and armour

59.6 External links

- http://penelope.uchicago.edu/~{ }grout/encyclopaedia_romana/britannia/anglo-saxon/suttonhoo/coppergate.html
- Coppergate Helmet

Chapter 60

Coventry Sallet

The **Coventry Sallet** is a 15th-century helmet now on display at **Herbert Art Gallery and Museum**.^[1] English sallets have been considered both rare and important.^[2]

60.1 Description

The Sallet is 11 inches (27.9 cm) in height, 12.25 inches (31.1 cm) from front to back and is 7.75 inches (17.9 cm) wide.^[1] It weighs 5.25 pounds (2.4 kg).^[1] It has a short tail and a jawbone type **visor** with a brow reinforcing.^[3] Stylistically, it is termed a “high crowned” helmet, different from the style usually seen in Italy or Germany.^[4] A plume holder was added to the helmet at some time after its manufacture.^[3]

60.2 History

The helmet was made around 1460, during the period of English civil conflict known as the **Wars of the Roses**, and the armourer’s marks suggest that it was made by an artisan originating from Italy.^[5] During the 19th century it was used in Coventry’s **Godiva Procession**.^[1] For a period it was kept on display at St Mary’s Hall, Coventry, and is now shown at the city’s **Herbert Art Gallery and Museum**.^[1]

Very few pieces of English-made armour survive from this period; the Coventry Sallet is believed to be the only example of its type in England.^[4]

60.3 References

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- [2] **The Times**, 13 August 1927: Arms And Armour. New Exhibits At Victoria And Albert Museum
- [3] Blair, C (1955). “The Blithfield Sallet”. *Archeological CXI*: 192–163.
- [4] Gravett, Christopher (2001), *English Medieval Knight 1400-1500*, Osprey, p. 29, ISBN 978-1-84176-146-6
- [5] Shaffery, Peter Baron (1982). “Early English helmets Part II”. *Guns, weapons & Militaria* **1** (3): 24–28. Gravett, Christopher (2001), *English Medieval Knight 1400-1500*, Osprey, p. 29, ISBN 978-1-84176-146-6

60.4 External links

- *This article is about an item held at **Herbert Art Gallery and Museum**, Coventry. Object reference: AR.1962.54*



The Sallet seen from the front

Chapter 61

Horned helmet

European **Bronze Age** and **Iron Age** **horned helmets** are known from a number of depictions, but few actual finds. Headpieces mounted with **animal horns** or replicas of them also occur, as in the **Mesolithic Star Carr**. These were probably used for religious **ceremonial** or **ritual** purposes.

61.1 Prehistoric Europe

Two bronze statuettes dated to the early 12th century BC, the so-called “horned god” and “ingot god”, depicting deities wearing horned helmets, found in **Enkomi, Cyprus**.

A pair of bronze horned helmets from the later **Bronze Age** (dating to ca. 1100–900 BC) were found near **Veksø, Denmark** in 1942.^[1] Another early find is the **Grevensvænge** hoard from **Zealand, Denmark** (ca. 800–500 BC, now partially lost).

The **Waterloo Helmet**, a Celtic bronze ceremonial helmet with **repoussé** decoration in the **La Tène style**, dating to ca. 150–50 BC, was found in the **River Thames**, at **London**. Its abstracted 'horns', different from those of the earlier finds, are straight and conical.^[2] Late **Gaulish** helmets (ca. 55 BC) with small horns and adorned with wheels, reminiscent of the combination of a horned helmet and a wheel on plate C of the **Gundestrup cauldron** (ca. 100 BC), were found in **Orange, France**.

61.2 Migration Period

Further information: **Tierkrieger**

Depicted on the **Arch of Constantine**, dedicated in 315 AD, are Germanic soldiers, sometimes identified as “**Cornuti**”, shown wearing horned helmets. On the relief representing the **Battle of Verona (312)** they are in the first lines, and they are depicted fighting with the bowmen in the relief of the **Battle of the Milvian Bridge**.^[3]

A depiction on a **Migration Period** (5th century) metal die from **Öland, Sweden**, shows a warrior with a helmet adorned with two snakes or dragons, arranged in a manner similar to horns. Decorative plates of the **Sutton Hoo** helmet (ca. 600 AD) depict spear-carrying dancing men wearing horned helmets.^[4] A diebolt for striking plaques of this kind was found at **Torslunda, Sweden**.^[5] An engraved belt-buckle found in a 7th-century grave at **Finglesham, Kent** in 1965 bears the image of a naked warrior standing between two spears wearing a belt and a horned helmet;^[6] a case has been made^[7] that the much-repaired **chalk figure** called the “**Long Man of Wilmington**”, **East Sussex**, repeats this iconic motif, and originally wore a similar cap, of which only the drooping lines of the neckguard remain. This headgear, of which only depictions have survived, seems to have mostly fallen out of use with the end of the Migration period.

61.3 Middle Ages

During the **High Middle Ages**, fantastical headgear became popular among knights, in particular for tournaments.^[8] The *achievements* or representations of some **coats of arms**, for example that of **Lazar Hrebeljanovic**, depict them, but they rarely appear as charges depicted within the arms themselves. It is sometimes argued that helmets with large protuberances would not have been worn in battle due to the impediment to their wearer. However, impractical adornments have been worn on battlefields throughout history.

61.4 In Asia

In pre-**Meiji Restoration** Japan, some **Samurai armor** incorporated a horned, plumed or crested helmet. These horns, used to identify military commanders on the battlefield, could be cast from metal, or made from genuine **water buffalo** horns.

Indo-Persian warriors often wore horned or spiked helmets in battle to intimidate their enemies. These conical “devil masks” were made from **plated mail**, and usually had eyes engraved on them.

61.5 Popular association with Vikings

Ceremonial use of horned helmets during the **Germanic Iron Age** persisted until the 7th century and can thus be argued to possibly have overlapped with the early **Viking Age**. However, there is no evidence that horned helmets were ever worn in battle at any point during the Viking Age.^[9]

Nevertheless, **popular culture** came to associate horned helmets strongly with **Viking warriors**.^[9] The popular association probably arose in 19th century **Scandinavian Romanticism**, possibly by misattribution of Bronze Age images such as the **Grevensvænge** figurines. More concrete evidence suggests those depictions were inspired by the work of Carl Emil Doepler, who in 1876 created horned helmets for use in the first **Bayreuth Festival** production of Wagner’s *Der Ring des Nibelungen*.^[9]

A 20th-century example of this association is the **Minnesota Vikings** football team, which as its logo carries a horn on each side of the helmet.

61.6 See also

- **Winged helmet**
- **Horned God**
- **Golden hat**
- **Pointy hat**

61.7 References

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- [8] See the depiction of **Wolfram von Eschenbach** and others in the **Codex Manesse**.
- [9] "Did Vikings wear horned helmets?". *The Economist explains*. **The Economist**. February 15, 2013. Retrieved 2013-02-17. Unfortunately, few Viking helmets survive intact. The small sample size cannot prove the point definitively, but they are all horn-free....Where there were gaps in the historical record, artists often used their imagination to reinvent traditions. Painters began to show Vikings with horned helmets, evidently inspired by Wagner's costume designer, Professor **Carl Emil Doepler**, who created horned helmets for use in the first Bayreuth production of "**Der Ring des Nibelungen**" in 1876

61.8 External links

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- Did Vikings really wear horns on their helmets? from The Straight Dope



The bronze "Ingot God" from Enkomi, 12th century BC, Cyprus Archaeological Museum, Nicosia



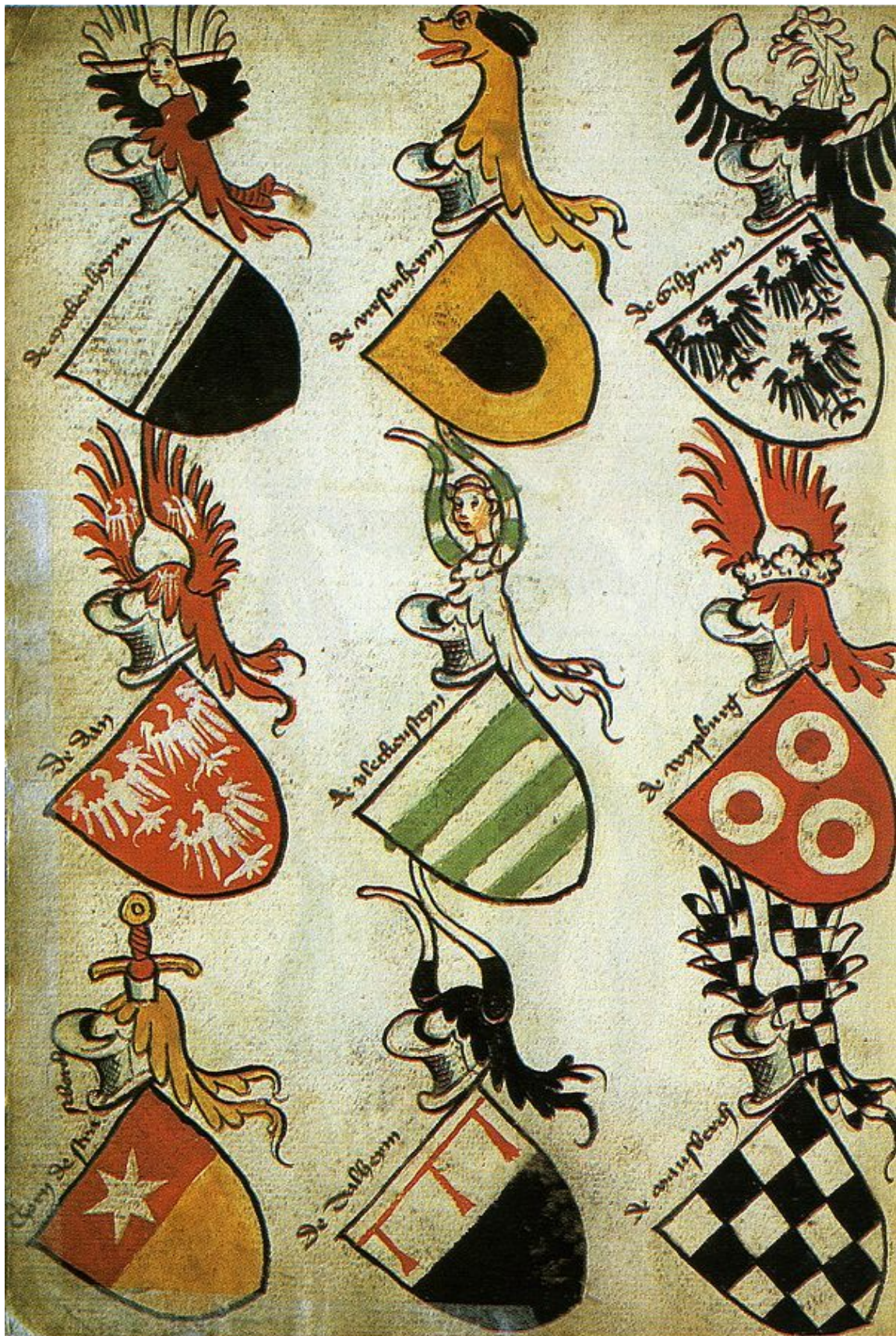
Plate C of the Gundestrup cauldron, 2nd–1st century BC



The bronze "Horned God" from Enkomi



The Waterloo Helmet, ca. 150–50 BC, found in the Thames (British Museum)



The German Hyghalmen Roll, ca. late 15th century, illustrates a horned helm in the arms of Dalheim, bottom row





Japanese kabuto with buffalo horns.



Indo-Persian Devil Mask, cuirass and scimitar



Minnesota Viking Pat Williams at the 2007 Pro Bowl.

Chapter 62

Mempo

“Mengu” redirects here. For the Burmese village, see [Meng-u](#). For the emperor known as Mengu, see [Möngke Khan](#). For the Turkish name, see [Mengü](#).

Mempo (also **menpō**, **mengu**^{[1][2][3]} or occasionally **men yoroi**^[4]), is the term for various types of facial armour worn by the [samurai](#) class and their retainers in feudal Japan. Types of Japanese facial armour include the *somen*, *menpō*, *hanpo* and *happuri*.

62.1 Description

Mempo were facial armour which covered all or part of the face and provided a way to secure the top-heavy *kabuto* (helmet). The *Shinobi-no-o* (chin cord) of the kabuto would be tied under the chin of the mempo.^[5] There were small hooks called *ori-kugi* or posts called *odome* located on various places to help secure the kabuto’s chin cord. Mengu may be constructed from iron or leather, or a combination of both. They may have a [lacquered](#) or rusted type of finish and can include a variety of facial details, such as [moustaches](#), fierce teeth and a detachable nose.^{[6][7]} Most mempo with the exception of the happuri had a small hole underneath the chin for sweat drainage.

Mempo are similar to masks worn by armored cavalry and infantry in ancient Chinese armies from the [Han Dynasty](#) to the [Song Dynasty](#).

62.2 Types of mempo

62.2.1 Somen

Somen covered the entire face.

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-

62.2.2 Menpō

Menpō covered the face from the nose down to the chin.

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-

-
-

62.2.3 Hanbō (hanpō)

Hanbo covered the lower face from under the nose to the chin.

-
-
-

62.2.4 Happuri

Happuri covered the forehead and cheeks.

-
-

62.2.5 Parts of the mengu

- *Odome*, an attachment post for securing the chin strap of a kabuto (helmet).
- *Ori-kugi*, an attachment hook for securing the chin strap of a kabuto (helmet).
- *Ase nagashi no ana*, a drain hole (or tube) for perspiration located under the chin of various mengu.
- Yodare-kake, throat guard on various mengu.

62.3 See also

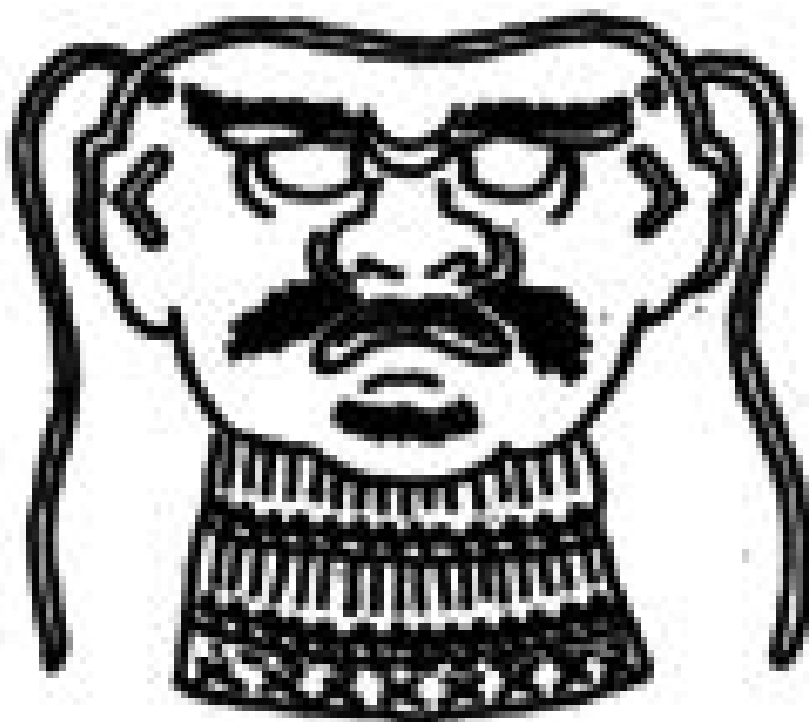
- Japanese armour
- Kabuto

62.4 References

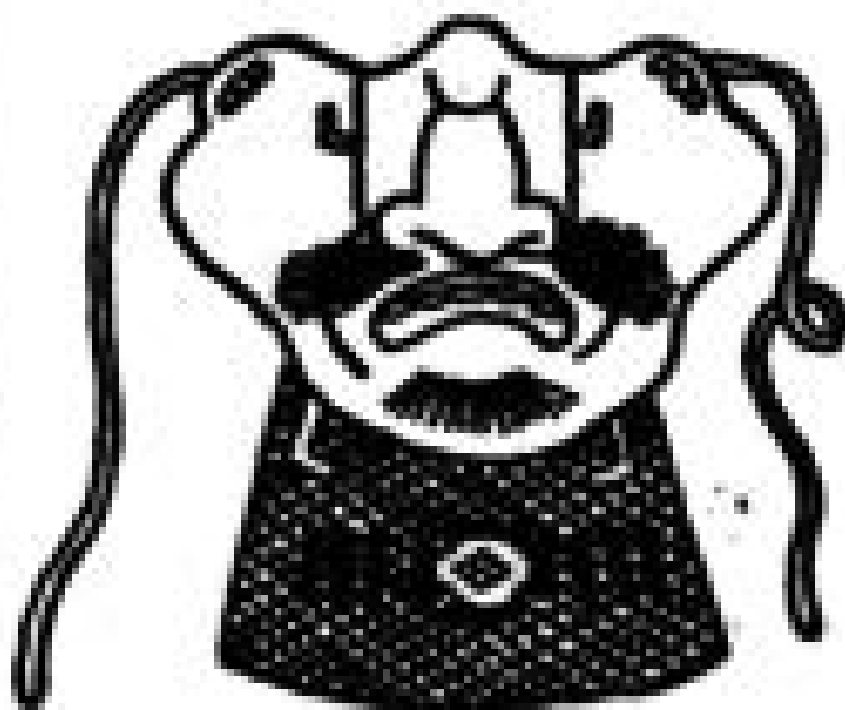
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- [3] *Samurai: The Weapons and Spirit of the Japanese Warrior*, Author Clive Sinclair, ,Publisher Globe Pequot, 2004, ISBN 1-59228-720-4, ISBN 978-1-59228-720-8 P.30,138
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62.5 External links

- [Samurai Arms and Armor](#)
- [Anthony Bryant's online Japanese armour manual](#)



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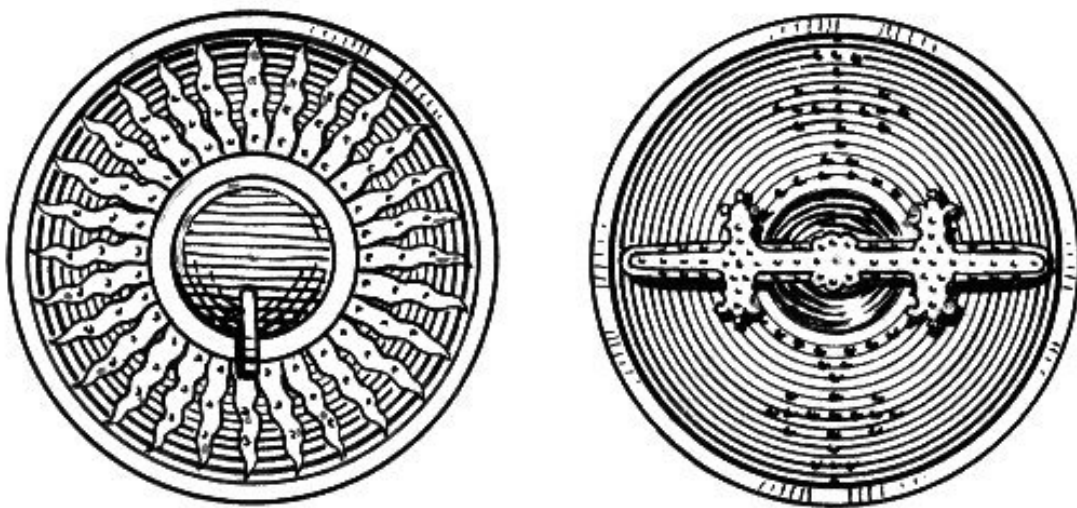
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Chapter 63

Buckler

For other uses, see [Buckler \(disambiguation\)](#).

A **buckler** (French *bouclier* 'shield', from Old French *bocle*, *boucle* 'boss') is a small shield, 15 to 45 cm (6 in to



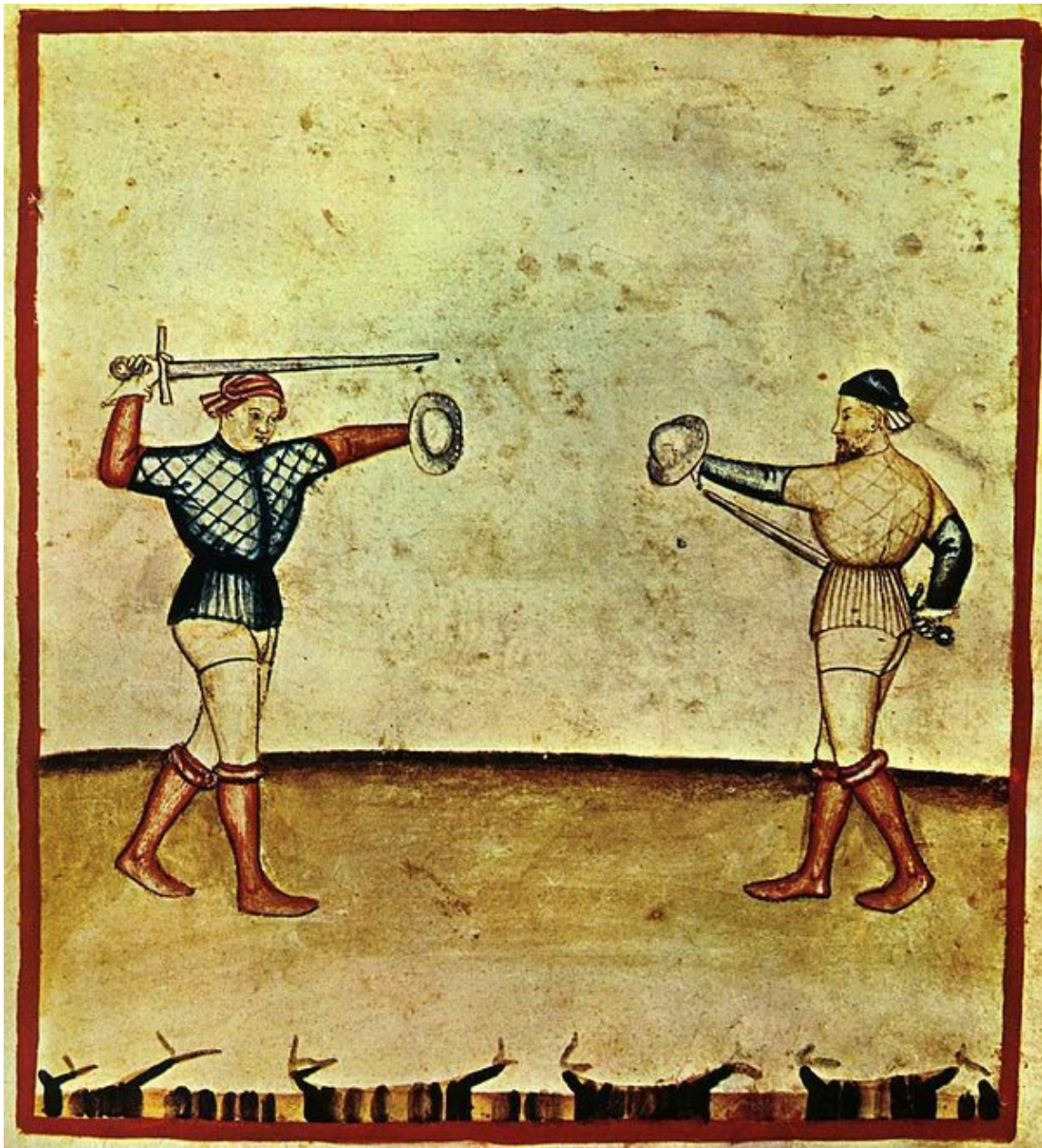
Buckler front and back

18 in) in diameter, gripped in the fist. It was generally used as a **companion weapon** in hand-to-hand combat during the **Medieval** and **Renaissance** periods. Its size made it poor protection against missile weapons (e.g., **arrows**) but useful in deflecting the blow of an opponent's **sword** or **mace**. There are two major forms of mediievally documented bucklers. The first is a simple **round shield** with the fist positioned directly behind the **boss** with a variety of shapes of face and depths of rim. These could also have projections from the top and bottom as in **Hans Talhoffer's** *Fechtbücher* or serrated rings around the boss as in one example in the **Wallace Collection**. The second major form is a corrugated rectangle as suggested by **Achille Marozzo** in his *Opera Nova*.

MS I.33, considered the earliest extant armed-combat manual, (around 1300) contains an early description of a system of combat with buckler and **sword**.

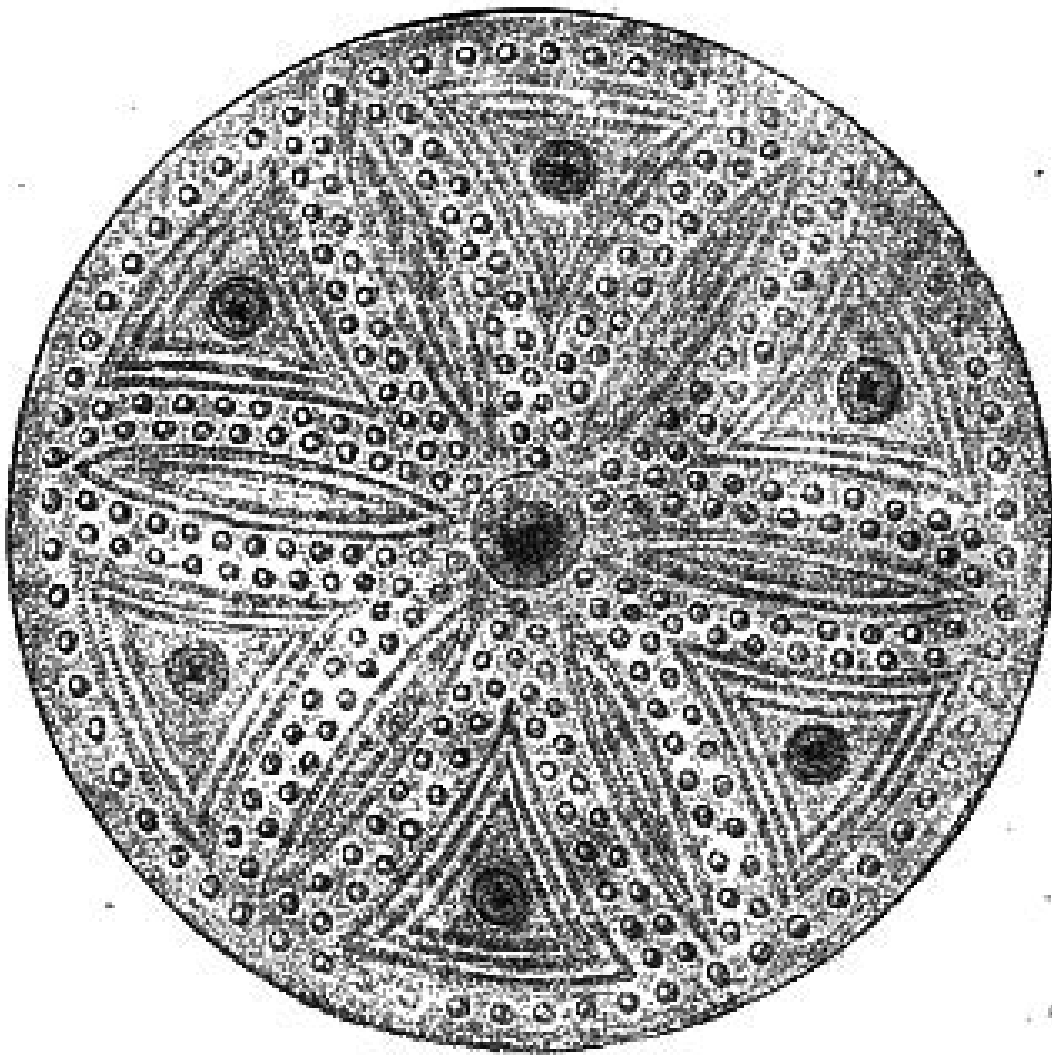
63.1 Uses

The buckler was more widely used than is commonly known. It was a simple yet effective weapon, often combined with a short sword, **falchion**, or **rapier**. It was popular circa 1100 to 1600.^[1] The buckler had a variety of roles when it came to swordplay, but five principal means come to the fore as described in **MS I.33**. Each use recognizes the shield's small size and maneuverability when dealing with light blades.



Sword and buckler combat, plate from the Tacuinum Sanitatis illustrated in Lombardy, ca. 1390.

- Hand protection: The primary use of the buckler was to protect the sword hand.
- Deflector: The buckler's lightness and curved center made it excellent for deflecting attacking blades.
- Blinder: The light blades used in conjunction with the buckler depended on rapid movements, which meant that a single second was an important advantage. The wielder of the buckler could use the buckler to shield his sword-hand's position from view, keeping his opponent from guessing his next strike.
- "Metal fist": A buckler could be used to directly attack an opponent by punching with either its flat face or its rim.
- Binder: The buckler could be used to bind an opponent's sword hand and weapon as well as their buckler against their body. The buckler was also very useful in grappling, where it allowed an opponent's arms to be easily wrapped up and controlled.



O'Donovan's Shield.

Irish round shield

63.2 Decoration

In classical antiquity, bucklers on medals were either used to signify public vows rendered to the gods for the safety of a prince, or that he was esteemed the defender and protector of his people: these were called **votive bucklers**, and were hung at altars, etc.^[2]

63.3 See also

- Adarga
- Lantern shield
- Rodeleros (lit., “shield bearers”, also known as “sword and buckler men”)
- Swashbuckler
- Targe

63.4 References

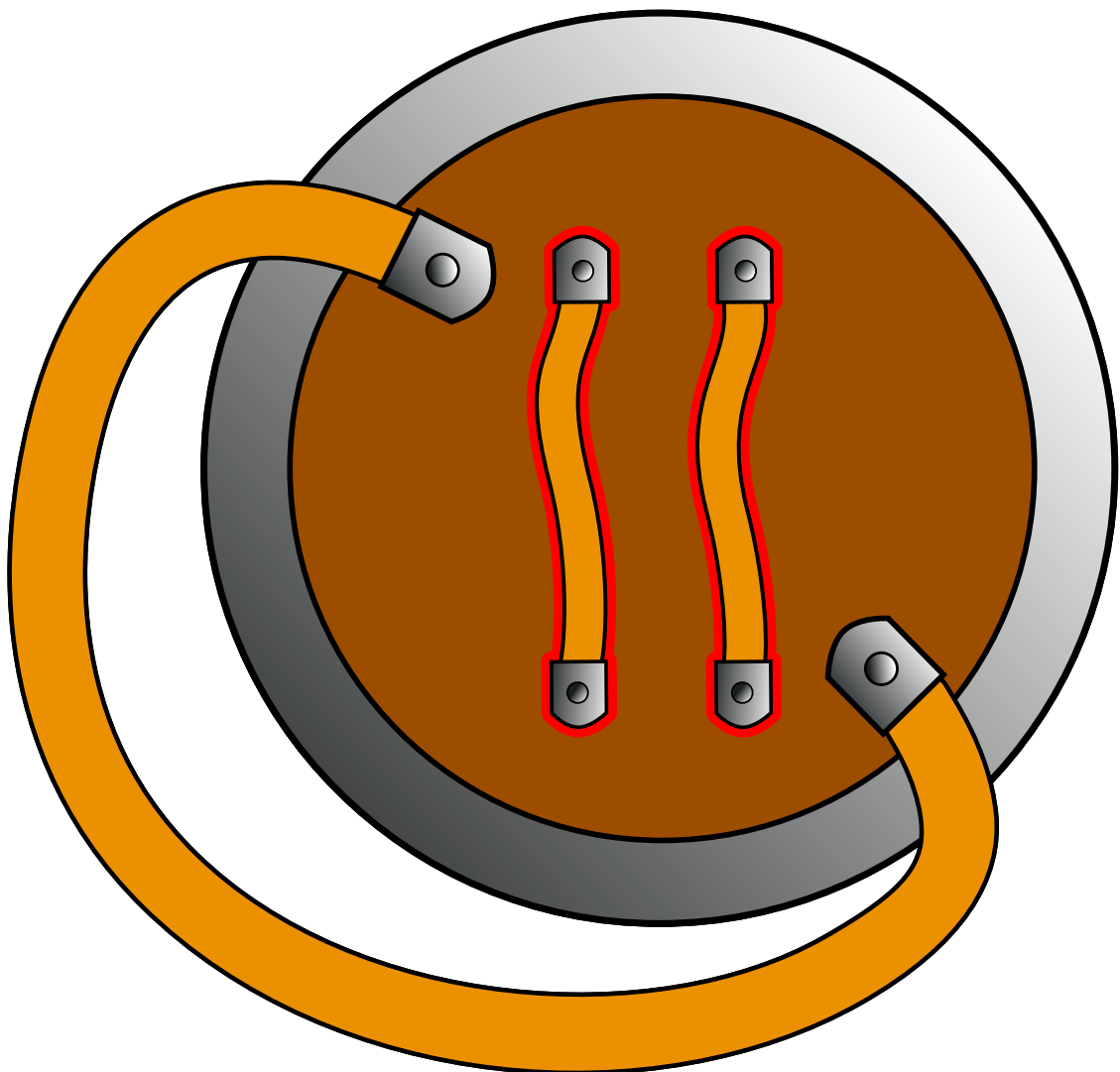
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63.5 External links

- The Buckler

Chapter 64

Enarmes



Shield with enarmes highlighted

Enarmes are the leather gripping straps attached to the back of shields throughout the Medieval period.

Enarmes represented a significant change in shield technology, as beforehand shields were held by a single bar that ran behind a boss. Enarmes were held in place by riveting through the leather and the facing of the shield, and reinforced with small, square-cut washers. Enarmes are visible on shields in the Bayeux Tapestry.

64.1 See also

- Guige

64.2 References

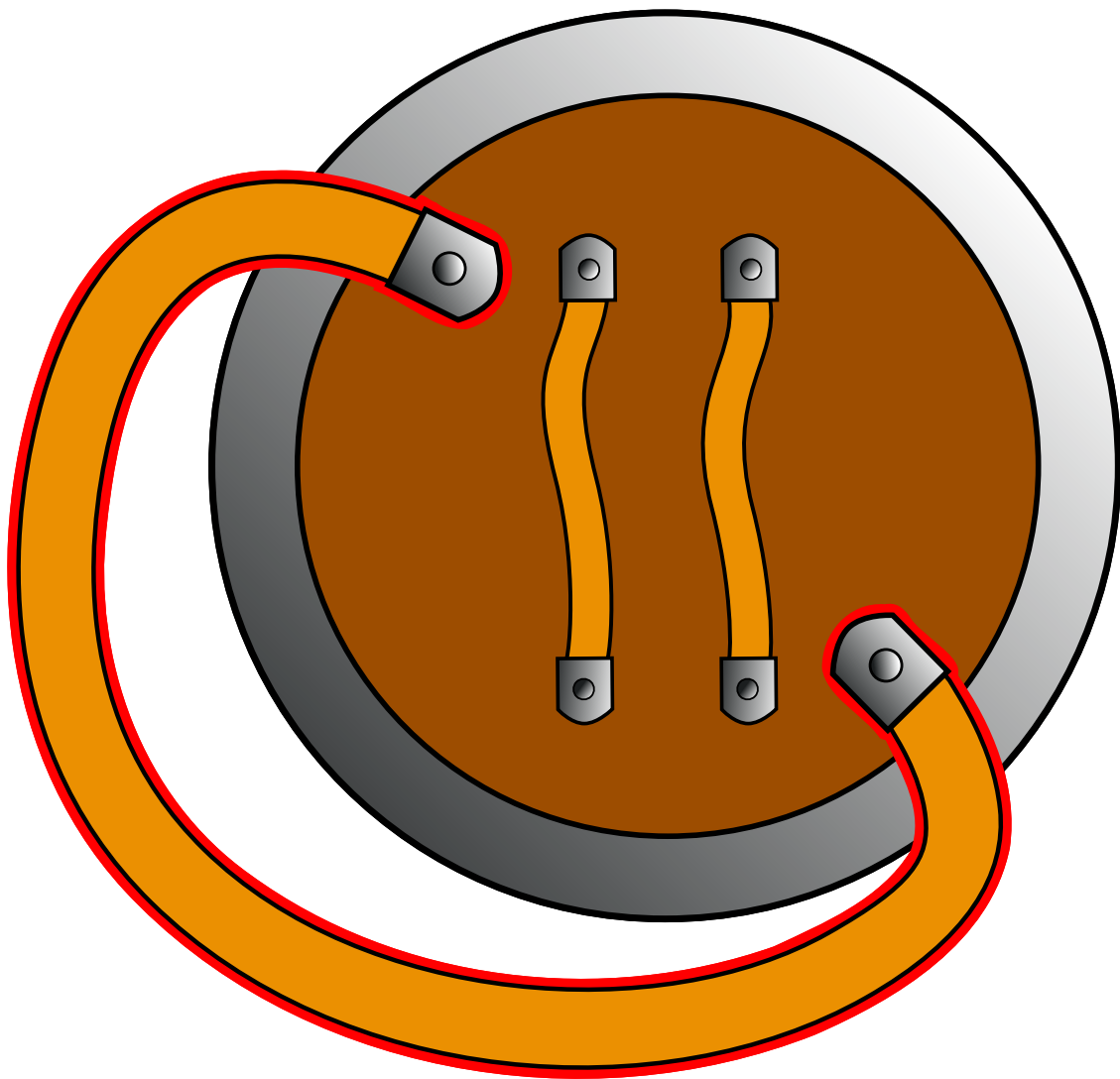
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Chapter 65

Guige

For the baroque dance, see *Gigue*.

A **guige** is a long strap, typically made of leather, used to hang a shield on the shoulder or neck when not in use.



Shield with guige highlighted

Used in combat, it freed a soldier to use a weapon requiring two hands (or a weapon in each hand) without discarding the shield; the shield could then be easily retrieved when needed.^[1]

Some guiges had a buckle to adjust the length. A guige could be attached to the shield anywhere along its rim, and could run horizontally, vertically, or diagonally across the diameter of the shield.

Most information about the usage of guiges comes from various Medieval works of art, such as the [Bayeux Tapestry](#).

65.1 See also

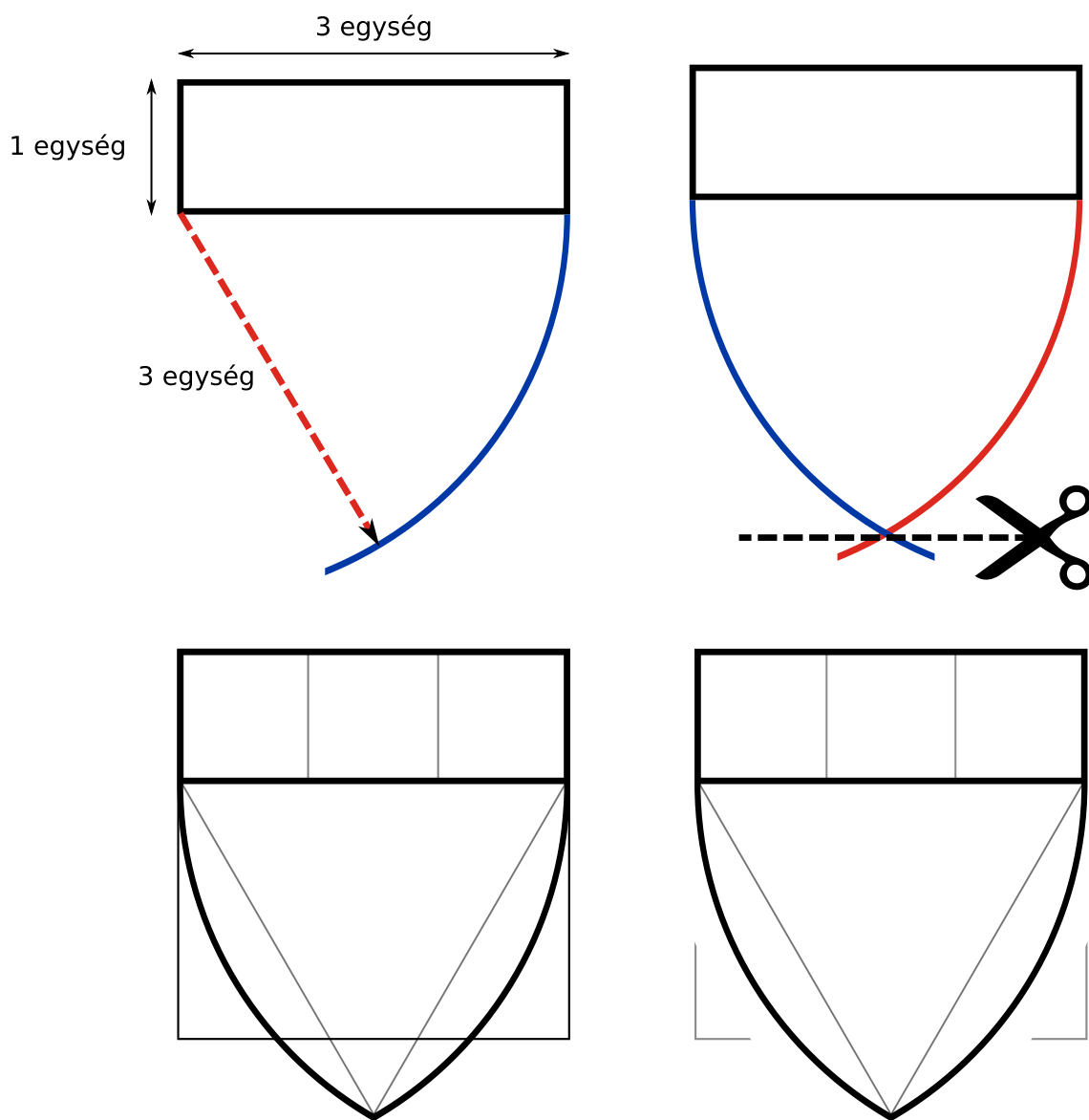
- [Enarmes](#)

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Chapter 66

Heater shield



*Geometrical construction of the “equilateral triangle” style of **Heater shield**, for use as an heraldic **escutcheon***

The **heater shield** or **heater-shaped shield** is a form of European medieval shield, developing from the early medieval **kite shield** in the late 12th century- as depicted in the great seal of Richard I and John.

The term is a **neologism**, created by Victorian antiquarians due to the shape's resemblance to a **clothes iron**.

Smaller than the kite shield, it was more manageable and could be used either mounted or on foot.^[1] From the 15th century, it evolved into highly specialized **jousting** shields, often containing a *bouche*, a notch or “mouth” for the lance to pass through. As plate armor began to cover more and more of the body, the shield grew correspondingly smaller, until by the mid 14th century, it was hardly seen at all outside of the tournament. Heater shields were typically made from thin **wood** overlaid with **leather**. Some shields, such as that of **Edward, the Black Prince** from his tomb in **Canterbury Cathedral**, incorporated additional layers of gesso, **canvas**, and/or **parchment**.^[2]

66.1 Notes

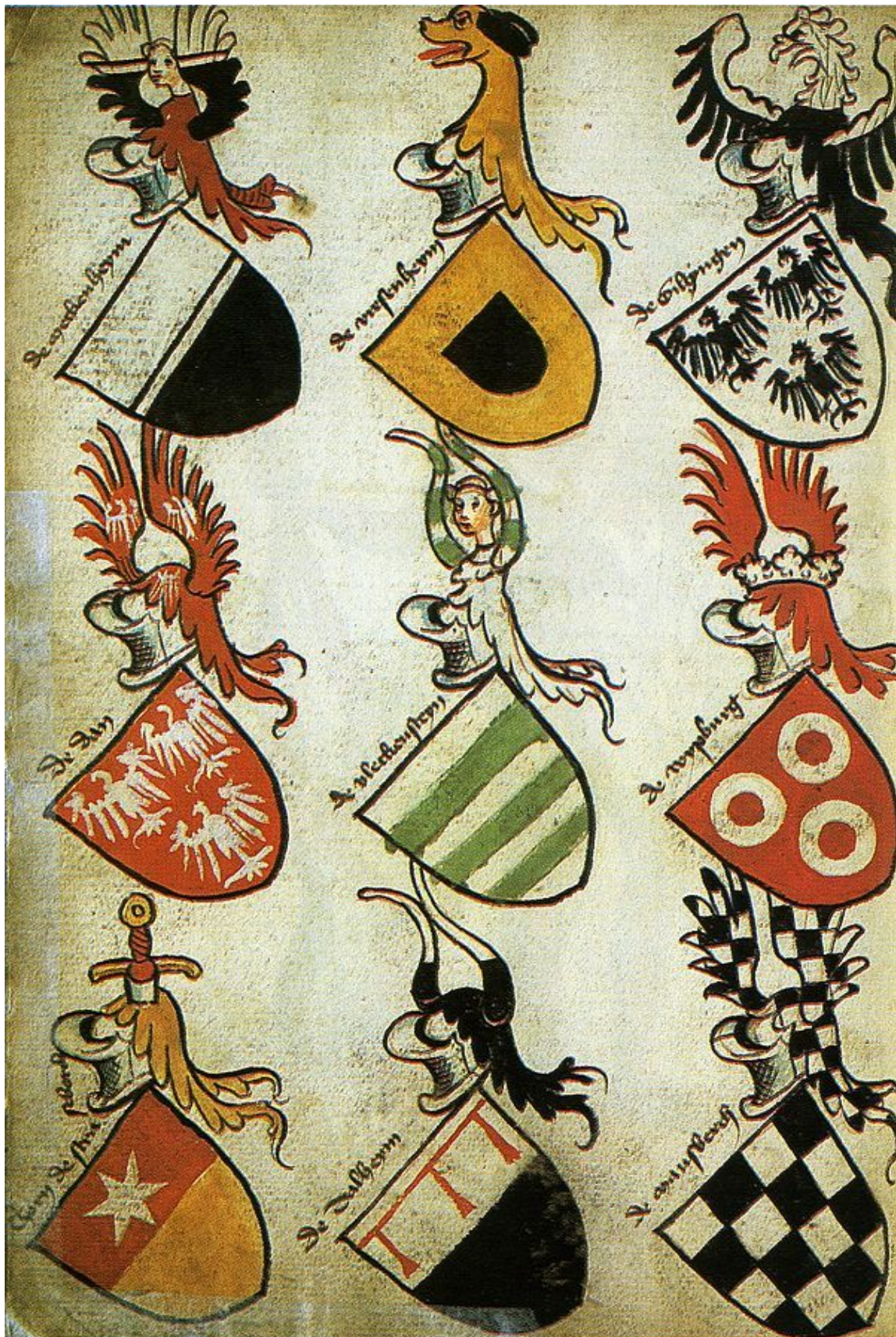
[1] *Medieval Swordsmanship* 102

[2] *Arms & Armor of the Medieval Knight* 83

66.2 Bibliography

- Clements, John (1998). *Medieval Swordsmanship: Illustrated Methods and Techniques*, Boulder, Colorado: Paladin Press. ISBN 1-58160-004-6
- Edge, David and Paddock, John (1988). *Arms & Armor of the Medieval Knight*, New York: Crescent Books. ISBN 0-517-10319-2





Heraldic roll of arms displaying heater-shaped heraldic shields or escutcheons. Hyghalmen Roll, Germany, late 1400s

Chapter 67

Hungarian shield

A **Hungarian** (or **Hungarian-style**) **shield** was a specific form of **targe**. It was rectangular at the bottom, but the upper edge swept upward forming a curve. The elongated upper edge was designed to protect the head and neck against **sabre** cuts. They were characteristic for the **Hungarian light cavalry**. During the 16th century, the design became popular across much of eastern Europe, among both **Christian** and **Muslim** horsemen.

Up to the 15th century, this type was in use in **Germany** as well as in **Hungary**. The 15th-century German **Gladiatoria fechtbuch** depicts what it calls “ungrischer schilt” used by two fencers on foot. The upward sweeping edge is less pronounced than a point attached to the lower edge, apparently for offensive use, similar to a **pata**.

67.1 External links

- 16th century example (www.metmuseum.org)



A Hungarian-style shield, with helmet, from the collection of the Metropolitan Museum of Art, New York.



Fighting with a Messer and what is described as a "Hungarian shield" in the mid-15th-century German commentary (*Gladiatoria fechtbuch* fol. 55r)

Chapter 68

Kite shield

A **kite shield** was a distinct type of shield from the 10th–12th centuries. It was either a reverse teardrop shape or later on, flat-topped. The tapering point extended down to either a distinct or rounded point. The term is a neologism, created by Victorian antiquarians due to the shape's resemblance to an early European **kite**.

Believed to be an evolution of the simple round shield purely to guard one whole flank of a rider when in combat, the shield gained popularity amongst professional soldiers as it allowed them to guard their foreleg when in a *mêlée*. It was either flat in section, or featured a gradual curve, to better fit the contour of the human torso, much in the style of a **scutum**. The shield is most closely associated with the Normans, who were one of the first cultures to use it widely, and can be seen throughout the **Bayeux Tapestry**.

The kite shield was an evolution in the development of shields, representing a change in the popular circular shape which had been dominant in Europe since at least 500 AD. The shield was still in widespread use throughout the 12th century, and is illustrated in art such as on the small Carlton-in-Lindrick knight figurine, but began to be phased out at the end of that century, and had largely disappeared by the 14th century as limb armour became more efficient, and therefore less leg cover was required of shields. Modifications to the kite shield occurred gradually, the top first being truncated, then the tail shortened and the resultant smaller shield that developed is referred to as a **heater shield**.

The kite shield predominantly features **enarmes**, leather straps used to grip the shield tight to the arm. Unlike a boss, or centralised grip, this allows a greater degree of weight distribution along the arm, rather than the weight pulling on the wrist. It also allowed the horse's reins to be gripped with the liberated left hand. Kite shields were strapped in a variety of different patterns, such as a simple left-right grip (where the left side strap is looser than the right, thus allowing an arm to be slid in and then grip the right strap), top-bottom (the same configuration but with the loose strap below the tight strap) and various cross-bracing (where two straps meet in an x shape). All these types of grips have appeared on various illuminated manuscripts, and it appears to have been a matter of preference which was used.

The shield sometimes featured a domed metal centrepiece (**shield boss**), but it has been generally accepted that this was decorative rather than providing protection for the hand as on a round shield. It is also taken that a large number of kite shields featured no boss, and this was also a matter of preference. However, the addition of a boss may have made the deflection of incoming blows easier. The shield was usually made from stout but light wood, such as lime, and faced in either leather or toughened fabric, such as canvas. Most shields featured some form of reinforced rim, generally toughened leather, although some historians believe the rims on certain shields would have been constructed from metal.

It could also be slung across the back with a **guige** strap when not in use. It was superseded by the small triangular **heater shield** by about 1250.

68.1 Notes





Kite shields used by both sides in a scene from the Bayeux Tapestry



Typical early European kite shape. (1828)

Chapter 69

Mantlet

This article is about the medieval shield. For “mantelet”, the garment, see [Mantle \(clothing\)](#).

A **mantlet** was a large [shield](#) or portable shelter used for stopping arrows or bullets, in [medieval warfare](#). It could be mounted on a wheeled carriage, and protected one or several soldiers.

In the [First World War](#) a mantlet type of device was used by the French to attack [barbed wire entanglements](#).^[1]

In military use from pre-WW2 onward, a mantlet is the thick, protective steel frontal shield, usually able to elevate and depress, which houses the main gun on an armoured tank, examples being [Tiger Tank](#), [Sherman Tank](#) and [Churchill Tank](#) .

34. A wicker U shaped Mantlet on wheels, wicker was a popular material for siege defences as it was lightweight, effective and easy to construct. The wheels add further mobility which meant that the user could move forward slowly but surely.

35. A wood planked L shaped Mantlet on wheels, similar to 34. Wooden planked construction with proper joinery and even arrow slots would make this a more hard wearing and expensive option. it would be heavier to push, require more time and skill to construct. this might not be the sort one would use when attacking uphill.

36. A [Pavise](#) (free standing shield) like wicker Mantlet. This is probably the cheapest and simplest option, but it would not be as hard wearing and does not offer as much cover as the other variations.

37. A wood planked Mantlet on wheels, affording the hard wearing protection of a wooden structure but still being mobile. the lever like handle would allow the Mantlet to be pushed along and then held upright in a stationary situation.

69.1 See also

- [Chemise \(wall\)](#)
- [Gun mantlet](#)
- [Pavise](#)
- [Gabion](#)
- [Testudo formation](#)

69.2 References

- [1] *It Nipped Its Way Through Wire Entanglements*, [Popular Science](#) monthly, January 1919, page 30, Scanned by Google Books: <http://books.google.com/books?id=HykDAAAAMBAJ&pg=PA30>

69.3 Further reading

- Farrow's military encyclopedia: a dictionary of military knowledge By Edward Samuel Farrow. [Page 259](#)

Chapter 70

Pavise

A **pavise** (or **pavis**, **pabys**, or **pavesen**, all of them words stemming from the name of the city of **Pavia**, in **Italy**) is a large convex **shield** of **European** origin used to protect the entire body. The pavise was also made in a smaller version for hand to hand combat and for wearing on the back of **men-at-arms**. It is characterized by its prominent central ridge. The concept of using a shield to cover an archer dates to at least to the writing of **Homer's Iliad**, where **Ajax** uses his shield to cover his half-brother **Teucer**, an archer, while he would “peer round” and shoot arrows.^[1]

The pavise was primarily used by **archers** and **crossbowmen** in the **medieval** period, particularly during **sieges**. It was carried by a *pavisier*, usually an archer, or, especially for the larger ones, by a groom. The pavise was held in place by the pavisier or sometimes deployed in the ground with a spike attached to the bottom. While reloading their weapons, crossbowmen would crouch behind them to shelter against incoming missile attacks.

Pavises were often painted with the coat of arms of the town where they were made, and sometimes stored in the town arsenal for when the town came under attack. Religious icons such as St. Barbara and St. George were featured on the front of pavises. Even the **Hussite** chalice was featured on pavises during the **Hussite Wars**. Most pavises were covered in a coarse, carpet base like canvas, before being painted with oil and egg-based paints. Only 200 or so exist today but many were present in the period.

A related term, **pavisade** or **pavesade**, refers to a decorative row of shields or a band of canvas hung around a sailing vessel to prevent an opponent from observing the activities of those on board and to discourage boarding.

70.1 See also

- **Mantlet**

70.2 References

[1] Cf. Book VIII

70.3 External links

- **15th Century Pavises** (myArmoury.com forum topic)
- **The Shield: An Abridged History of its Use and Development** (myArmoury.com article)



Model of a medieval crossbowman using a pavise shield. It is decorated with Bartolomeo Vivarini's St. Martin and the Beggar

Chapter 71

Rondache



A rondache

The **rondache** or **roundel** was a shield carried by Medieval foot soldiers.^[1] It was made of boards of light wood, sinews or ropes, covered with leather, plates of metal, or stuck full of nails in concentric circles or other figures.^[2]

71.1 References

[1] Definition at thinkexist.com

[2] Definition at wiktionary.org

Chapter 72

Shield boss



A Lombard shield boss from northern Italy, 7th century (Metropolitan Museum of Art)

A **shield boss**, or **umbo**, is a round, **convex** or conical piece of material at the centre of a shield. Shield bosses (or sometimes, just “bosses”) are usually made of thick metal but could also be made of wood. The boss was originally designed to deflect blows from the centre of round shields, though they also provided a place to mount the shield’s grip. As time went on and **heater shields** with curved bodies became more popular, and **enarmes** superseded the bar grip, the boss became more of an ornamental piece.

Often, bosses are not present on non-circular shields due to the differences in technique; with a round shield, one makes a **punching** motion towards an oncoming blow, while with a **heater** or **kite shield**, attacks are blocked by pivoting the shield about the body. A boss provides a significant advantage for deflecting blows when using a punching motion, but is not very effective when using a pivot to block an attack.

72.1 Manufacture

In **medieval** times, shield bosses were made by armourers out of sheets of iron or steel. The armourer started with a flat, relatively thin sheet and **sank** the metal into a bowl, which might then be **planished** and **polished**.

72.2 References

72.3 See also

- Phalera (harness)

72.4 External links

- Arador Armour Library article on construction of a shield boss

Chapter 73

Targe



A Highland targe exhibited in the National Museum of Scotland

Targe (from Old Franconian **targa* “shield”, Proto-Germanic **targo* “border”) was a general word for shield in late Old English. Its diminutive, *target*, came to mean an object to be aimed at in the 18th century.

The term refers to various types of shields used by infantry troops from the 13th to 16th centuries. The design was first developed in Spain.^[1] More specifically, a targe was a concave shield fitted with *enarmes* on the inside, one adjustable by a buckle, to be attached to the forearm, and the other fixed as a grip for the left hand. These shields were mostly made of iron or iron-plated wood. From the 15th century, the term could also refer to special shields used for jousting. A fair number were created wholly for show.^[1]

From the early 17th century, until the Battle of Culloden in 1746, the Scottish Highlander's main means of defence

in battle was his targe. After the disastrous defeat of the **Jacobites** at Culloden, the carrying of the targe had been banned, and many had been destroyed, or put to other uses. Those that remain have intricate patterns, and are decorated, indicating that they would have originally belonged to important people.

73.1 Structure of the Scottish targe



Charles Edward Stuart's highly decorated targe

Targes are generally, but not always, **round shields** between 18 in and 21 in (45–55 cm) in diameter. The inside of the targe was formed from two very thin layers of flat wooden boards, with the **grain** of each layer at right angles to the other. They were fixed together with small wooden pegs, forming **plywood**. The front was covered with a tough cowhide, which was often decorated with embossed **Celtic style** patterns. This was fixed to the wood with many brass, or in some cases, silver, nails, and occasionally brass plates were also fixed to the face for strength and decoration. Some targes had center **bosses** of brass, and a few of these could accept a long steel spike, which screwed into a small “puddle” of lead that was fixed to the wood, under the boss. When not in use, the spike could be unscrewed and placed in a sheath on the back of the targe. A Highlander was usually armed with a **broadsword** or dagger in one hand and a spiked targe on his other arm for close combat.

The back of the targe was commonly covered in deerskin, and a very few had some packing of straw etc. behind this. Some targes, usually those actually used in battle, had their backs covered in a piece of red cloth taken from the uniform of a government soldier (a “Redcoat”) that the owner had killed in battle. Although all the old targes show



Scottish reenactor with a targe.

signs of handles and arm straps, of various designs including centre-grips,^[2] there is very little evidence to indicate that there was any guige strap for carrying the targe over the shoulder.

The face of a targe typically used two general patterns - concentric circles, or a centre boss with subsidiary bosses around this. There are a few notable exceptions, such as a targe in [Perth Museum](#) in Scotland that is of a star design. Although some targe designs appear to have been more popular than others, there is very little to indicate that there ever were “clan” designs. The nearest that one might come to finding a “clan” design is four identical targes from the family armoury at [Castle Grant](#). It appears more likely that targe designs were individual to their owner. During the 1745/46 Jacobite uprising, a William Lindsay, a shieldwright in Perth made hundreds of targes for [Charles Edward](#)

Stuart's army. He made a distinction in price between an “officer’s targe” and an ordinary targe.

73.2 See also

- Buckler

73.3 References

- [1] Walker, Paul F (2013). *The History of Armour 1100-1700*. Crowood Press ltd. p. 121. ISBN 9781847974525.
- [2] “Targes from Yetholm, Scottish Borders and County Limerick”. Am Baile. Retrieved 2014-04-09.

73.4 External Links

- Highland targes of the seventeenth and eighteenth centuries

Chapter 74

Arming point

Arming points are reinforced places on a gambeson where pieces of armor may be laced on.

Chapter 75

Banded mail

Banded mail is a **neologism**, coined in the 19th century, describing a type of composite armor formed by combining the concepts behind the Roman *lorica segmentata* with **splint mail**. Its historicity is doubtful. It has become entrenched in the popular consciousness as a result of its inclusion in the armor list for *Dungeons & Dragons*.^[1]

75.1 Terminology

Confusion arises because of the wide variety of terms by which similar armors are known. Banded mail has been described as “a form of **mail** reinforced with bands of **leather**”, as “overlapping horizontal strips of laminated metal sewn over a backing of normal chain mail and soft leather backing” and as “many thin sheets of metal are hammered or riveted together”. The last description more closely fits **splinted armor**, which consists of long metal splints connected by mail/leather used for arm and leg protection. The final description of metal plates riveted to a sub-strate describe a coat of **plates** or **brigandine**, all of which consist of metal plates riveted to a leather or cloth fronting. Finally, armor constructed of rows of plates or platelets sewn or laced together, without backing/fronting, would be considered “laminar”. The current term for small metal plates joined together by chainmail is **plated mail**.

75.2 History

Although banded mail was considered real during the 19th century,^{[2][3]} later books on history claim that banded mail arose due to a misinterpretation of medieval manuscripts and tomb effigies.^[4]

While there have been some attempts at modern reconstructions of banded mail, there are no known historic examples. Existing manuscript and effigy representation has generally been interpreted as covering a variety of methods for depicting chainmail. However, Ffoulkes claimed that banded mail did exist, pointing specifically to an illustration in the *Romance of Alexander* where the depiction of mail changes on different parts of the same illustration. He asserted that banded mail was simply chainmail with leather thongs threaded through, and suggested that no specimen survives because the leather would have disintegrated between the armor’s heyday in the 13th century and today, leaving conventional chainmail.^[5]

75.3 See also

- **Laminar armour** - a historical armour from horizontal strips of plate.

75.4 Notes

[1] *Revised (v.3.5)System Reference Document (Equipment.RTF)*. Wizards of the Coast. p. 10. |first1= missing |last1= in Authors list (help)

- [2] Fairholt, Frederick William (1885). *Costume in England: A History of Dress to the End of the Eighteenth Century*. G. Bell and Sons. p. 27.
- [3] Hewitt, John (1860). *Ancient Armour and Weapons in Europe: From the iron period of the northern nations to the end of the seventeenth century*. John Henry and James Parker. p. 268.
- [4] Blair, Claude (1959). *European Armour circa 1066 to circa 1700*. New York: THE MACMILLAN COMPANY. pp. 35–36.
- [5] Ffoulkes, Charles John (2008) [First published 1912]. *The Armourer and His Craft*. Cosimo,. p. 48. ISBN 978-1-60520-411-6.

75.5 References

- http://de.academic.ru/pictures/dewiki/65/Arten_von_Panzerhemden.jpg
- <http://www.fantasy-workshop.com/faw/image-files/banded-mail-4.jpg>
- http://de.academic.ru/pictures/dewiki/87/Wartburg-Ludwig_der_Eiserne.jpg

Chapter 76

Boiled leather

Boiled leather, sometimes called *cuir bouilli*, was a historical construction material for **armour**. It consists of thick **leather**, boiled in water. According to some sources boiled **oil** and **wax** were used as well, while others posit the use of **ammonia** from fermented animal **urine**. The boiling causes the leather to become harder but also more brittle. The boiled leather can be fashioned into lames or **scales** to make **lamellar** or **scale armor**. The leather remains flexible for a short time after boiling, allowing it to be molded into larger plates.

Cuir bouilli has also been employed to **bind books**.

76.1 External links

- [Water hardened leather for armour](#)
- [Boiled leather in wax](#)
- [Cuir Bouilli/Hardened Leather FAQ](#)

Chapter 77

Bracer



Ketoh armguard, leather embellished with silver and turquoise, with bow

A **bracer** (or **arm-guard**) is a strap or sheath, commonly made of **leather**, **stone**, or **plastic** that covers the inside of an **archer's** arm to protect it while shooting. Bracers protect the inside of the archer's forearm against injury by the **string** of the **bow** or the fletching of the **arrow**. They also prevent loose clothing from catching the bow string. They normally cover part of the forearm only, but chest-guards are sometimes worn, usually by female archers, and other areas have at times been protected. With some combinations of non-baggy clothing and bows with a larger distance between the bow and the string, the archer may not need to wear any bracer.^[1]

77.1 Decorated bracers

The modern **Navajo** people and **Hopi** developed a form of bracer known as a **ketoh**, which can be decorated with silver, turquoise, and other adornments, possibly from earlier examples made of bone.^[2] Ketohs usually have a central motif, sometimes with a stone ornament, and four curvilinear shapes that radiate toward the corners. Ketohs may have a smooth leather surface on the inside of the arm and are functional, but they are normally used as items of personal and ritual adornment, or as **works of art** in their own right.^[3]

Stone wrist-guards from Beaker culture graves of the European Bronze Age have been thought to be archery bracers. However, they are usually found on the outside of the arm where they would have been more conspicuous. Many have only two holes which would make them difficult to fasten securely to the arm, and some have projecting rivets which would catch on the bow string and make them unsuitable for use as a bracer. Many show great skill in polishing and stone working, and few are found in areas from which their stone originates. When the objects occur in barrows, they always occur in the central primary grave, a place thought to be reserved for heads of family and other important people. They may have been status symbols of prowess in hunting or war, probably mounted as decorations on functional bracers. A few prehistoric wrist-guards made of gold or amber have also been found; scholars believe these were for ornamental rather than functional use.^[2] A review of British bracers by Hunter, Woodward *et al.* looks in detail at all the British bracers, identifying two major sources of stone from which they are made and suggesting that they may well not be connected with archery, and highlighting other potential uses.^[4]

77.2 Other uses

Bracers have also been used in other sports, including ball games such as Follis (played in ancient Rome).

In many common role-playing games, bracers are a general piece of armour rather than protective archery equipment, possibly due to confusion with vambraces.

77.3 Notes

- [1] *Toxophilus - the School of Shooting*. by Roger Ascham. Read Books 2006. ISBN 1-84664-369-4 ISBN 978-1846643699
- [2] Harry Fokkens, Yvonne Achterkanp, and Maikel Kuijpers, “Bracers or Bracelets? About the Functionality and Meaning of Bell Beaker Wrist-guards”, *Proceedings of the Prehistoric Society 2008*, vol. 74, pp. 109-149
- [3] “KETOH. Navajo. Silver and Leather”, Millicent Rogers Museum of Northern New Mexico Collection, Accessed 25 February 2008
- [4] Hunter and Woodward et al “An Examination of Prehistoric Stone Bracers from Britain” An Examination of Prehistoric Stone Bracers from Britain

77.4 External links

- Archer’s Gear: The bracer, La Belle Compagnie Website
- Roundway G8 burial Wiltshire Heritage Museum, Devizes
- Ketohs, collection of the National Museum of the American Indian

Chapter 78

Gambeson

A **gambeson** (or **aketon** or **padded jack** or **arming doublet**) is a padded defensive **jacket**, worn as **armour** separately, or combined with **mail** or **plate armour**. Gambesons were produced with a sewing technique called **quilting**. Usually constructed of **linen** or **wool**, the stuffing varied, and could be for example scrap **cloth** or horse hair. During the 14th century, illustrations usually show buttons or laces up the front.

An **arming doublet** (also called **aketon**) worn under armour, particularly **plate armour** of fifteenth- and sixteenth-century Europe, contains **arming points** for attaching plates. Fifteenth century examples may include **goussets** sewn into the elbows and armpits to protect the wearer in locations not covered by plate. **German gothic armour** arming doublets were generally shorter than **Italian white armour** doublets, which could extend to the upper thigh. In late fifteenth century Italy this also became a civilian fashion. Men who were not knights wore arming doublets, probably because the garment suggested status and **chivalry**.^[1]

78.1 Etymology

The term *gambeson* is a loan from Old French *gambeson*, *gambaison*, originally *wambais*, formed after the **Middle High German** term *wambeis* “doublet”, in turn from **Old High German** *wamba* “stomach” (cognate to *womb*.)

The term *aketon*, originally medieval French *alcottonem* might be a loan from **Arabic** *al-qutn* “cotton (definite article - the cotton).”

In medieval Norse, the garment was known as *vápntréyja*, lit. “weapon shirt,” or *panzari/panzer*.^[2] *Treyja* is a loan from (Middle) Low German. *Panzari/panzer* is probably also a loan from (Middle) Low German, though the word has its likely origin in Italian, and is related to Latin *panTEX* ‘abdomen’.^[3]

Also known as: Aketon, acton, arming coat, auqueton, gambeson, hacketon, haqueton, panzari/panzer, vápntréyja, wambais, wambesium, wambuis or wambs.

78.2 History

Quilted leather open jackets and trousers were worn by **Scythian** horsemen before the 4th century BC, as can be seen on **Scythian gold** ornaments crafted by Greek goldsmiths. The European gambeson can be traced at least to the late 10th century, but it is likely to have been in use in various forms for longer than that. In Europe, its use became widespread in the 13th century, and peaked in the 14th and 15th centuries.

The gambeson was used both as a complete armour unto itself and underneath mail and plate in order to cushion the body and prevent chafing. It was very insulatory and thus uncomfortable, but its protection was vital for the soldier.

Although they are thought to have been used in Europe much earlier, gambesons underwent a revolution from their first proven use in the late 11th and early 12th centuries as an item of armour that simply facilitated the wearing of mail to an item of independent armour popular amongst infantry. Although quilted armour survived into the **English Civil War** in **England** as a poor man’s cuirass, and as an item to be worn beneath the few remaining suits of full plate, it was increasingly replaced by the ‘buff coat’ – a leather jacket of rough suede.

There are two distinctive designs of gambeson; those designed to be worn beneath another armour, and those designed to be worn as independent armour. The latter tend to be thicker and higher in the collar, and faced with more resilient materials, such as leather, or heavy canvas. This variant is usually referred to as *padded jack* and made of several (some say around 18,^[4] some even 30^[5]) layers of cotton, linen or wool. These jacks were known to stop even heavy arrows^[5] and their design of multiple layers bears a striking resemblance to modern day **body armor**, which substituted at first silk, ballistic nylon and later **Kevlar** as fabric.

For common soldiers who could not afford mail or plate armour, the gambeson, combined with a helmet as the only additional protection, remained a common sight on European battlefields during the entire Middle Ages, and its decline – paralleling that of plate armour – came only with the **Renaissance**, as the use of firearms became more widespread, until by the 18th century it was no longer in military use.

While the use of linen has been shown in archaeological evidence, the use of cotton – and cotton-based canvas – is disputed since the access to large amounts of cotton cloth was not widely available in northern Europe at this time. It is quite probable that Egypt (and Asia-Minor generally) still produced cotton well after the 7th and 8th centuries and knowledge (and samples) of this cloth was brought to Europe by the returning Crusaders. However logistics and expense of equipping a town militia or army with large amounts of cotton-based garments is doubtful, when flax-based textiles (linen) was in widespread use.

78.3 See also

- **Doublet** (a.k.a. *pourpoint*)
- **Buff coat**

78.4 References

- [1] **Fashion in European Armor, 1400–1500** Dirk H. Breiding, Department of Arms and Armor, The Metropolitan Museum of Art
- [2] Heggstad, Leiv, Finn Hødnebo, Erik Simensen (2008), *Norrøn Ordbok*, Det norske samlaget, Oslo, pp. 477,703-704
- [3] bokmalsordboka.uio.no
- [4] Embleton, Gerry: “Medieval military costume”, p.67, Crowood press, 2000
- [5] Embleton, Gerry & Howe, John: “Söldnerleben im Mittelalter”, p.47, Motorbuchverlag 1994

78.5 External links

- Metropolitan Museum of Art, New York City “The Function of Armor in Medieval and Renaissance Europe.”
- **How a Man Shal Be Armyd** modern reproduction of an arming doublet with diagrams and photographs
- **How a man shall be armed for his ease when he shall fight on foot** a translation of the mid-fifteenth century treatise on armor, translated into modern English and accompanied by pictorial references.





Kingdom of Bagirmi horseman in full padded armour suit



Men's Gambeson, ca. 1660-1670. Collection Centraal Museum, Utrecht.

Chapter 79

Jack chain



Two lengths of single-jack chain

A **jack chain** is a type of **chain** made of **thin wire**, with figure-eight-shaped links, and loops at **right angles** to each other. Jack chains are often used to suspend fixtures such as lights or signs, for decorative purposes, or as part of a **cable lock**.^[1]

Jack chain may be manufactured as either single-jack chain or as double-jack chain. If double-jack, the lower loop is formed of two strands of wire rather than just one as in a single-jack.

Before the days of lavatory cisterns being close to the pan, jack chains were often used to release the cistern plug.

79.1 Other meanings of “jack chain”

A jack chain is a tool attached to a toothed chain for moving logs.^[2]

A jack chain is a form of arm protection for the 15th century infantry soldier who typically was not dressed in plate armor but wore a padded arming jacket (“jack”) to protect his upper body.^{[3][4]}

79.2 References

- [1] “Jack Chains”. Halebros.com. Retrieved 2013-11-02.
- [2] “jack chain: Definition from”. Answers.com. Retrieved 2013-11-02.
- [3] “Image” (PDF). Historiclife.com. Retrieved 2013-11-02.
- [4] “Jacks” (PDF). Historiclife.com. Retrieved 2012-02-14.

79.3 External links

- Image of various sizes of jack chain



Two links of double-jack chain

Chapter 80

Jazerant

Jazerant (Jaz'er`ant), or *Hauberk jazerant*, is a form of medieval light coat of armour consisting of mail between layers of fabric or leather. It was largely used in Turkey, the Middle East and Persia from the 11th and 12th century,^{[1][2]} at the end of the 13th and throughout the 14th century.^[3] In the following centuries, its use was replaced by that of the Jaque.^[3] Also known as *Kazaghand*,^[1] *Gazarant* or *Gesserant*,^[4] its name has been variously interpreted but most likely derives from the Arabic *Jacerina*,^[5] which means *Algerine*.^[4] The Arabs of north Africa were renowned for their mail coats. The samurai of Japan used a type of jazerant during the Edo period, kusari katabira (mail jacket) were constructed with mail sewn between layers of cloth.

80.1 See also

- Brigandine
- Coat of plates
- Scale armour

80.2 References

- [1] Andre-Driussi, Michael Andre-Driussi (2008). *Lexicon Urthus, Second Edition*. Sirius Fiction. p. 192. ISBN 0964279517.
- [2] The Free Dictionary. "Jazerant". The Free Dictionary. Retrieved 15 January 2013.
- [3] Oplotheca (1816). *Catalogue of a most splendid and instructive collection of ancient armour*. Printed by Smith and Davy. pp. 30–31.
- [4] The Burlington Magazine (1904). *The Burlington Magazine for Connoisseurs, Vol. 6*. New York: Savile Publishing Company. p. 463. ISSN 0951-0788
- [5] Giuseppe Baretti, Neuman Henry (1831). *Neuman & Baretti's Dictionary of the Spanish and English Languages*. London: Longman & Rees. p. 516.



The samurai jazarant (kusari katabira), mail armor was sewn between layers of cloth on this jacket.

Chapter 81

Kasten-brust armour

Kasten-brust armour (German: *Kastenbrust* — “box-shaped breast”) — is a German form of plate armour from the first half of 15th century.

Kasten-brust armour was a style of early gothic armour widely used in the Holy Roman Empire. Typical harness construction consists of: a grand-bascinet helm, box-shaped cuirass, firm gauntlets, and long skirt. Unfortunately only one of such armours is known to have survived until today, and this armour (made approximately at 1440) now could be seen in Rathaus Museum of Vienna. Kasten-brust armour is however widely represented by paintings and statues of the first half of the 15th century.

81.1 Gallery

- Knights in kasten-brust armours (altar of Saint Bavo Cathedral in Ghent by Jean van Eyek, 1427-30)
- A statue of Arthur from the Great Ancient Kings Kenotath in Innsbruck (Austria), one of several examples of Kasten-Brust armor worn by the statues within Maximilian's tomb, this particular example displaying anachronism

81.2 External links

- Living History Library entry for Kastenbrust armour
- Replica with detailed fotos

81.3 References

- Osprey-Military “German Medieval Armies 1300-1500” (Men-at-Arms Series t166), text by Christopher Gravett, colour plates by Angus McBride, editor Martin Windrow, Reed International Books Ltd., ISBN 0-85045-614-2 "



A knight in full kasten-brust amour without gauntlets (altar of Saint Leonard churge in Basele by Conrad Witz, 1435)

Chapter 82

Lamellar armour

Lamellar armor consists of hundreds of small rectangular iron, leather (rawhide), or bronze plates (scales or *lamellae*) which are pierced in various locations and laced together into horizontal rows to the proper length needed to construct a particular armor item. **Lamellar armor** was one of three early **body armor** types, made from rectangular or vaguely rectangular armor plates laced into horizontal rows. The other two types are **scale armour** and **laminar armour**. Lamellar armor was used over a wide range of time periods in Eastern Europe, the Middle East and across Asia, including Japan.

82.1 Description

Lamellar armor consists of small platelets known as lamellae, which are punched and laced together, typically in horizontal rows.

Lamellae can be made of metal, leather *cuir bouilli*, horn, stone, bone or more exotic substances. Metal lamellae may be lacquered to resist corrosion or for decoration. Unlike **scale armor**, which it resembles, lamellar armor is not attached to a cloth or leather backing (although it is typically worn over a padded undergarment).

In the orient, lamellar armor eventually overtook scale armor in popularity as lamellar restricted the users movements much less than scale armour.^[1]

82.2 Use and history

Lamellar armour was often worn as augmentation to existing armour, such as over a mail **hauberk**. The lamellar **cuirass** was especially popular with the **Rus**, as well as **Mongols**, **Turks**, **Avars**, and other steppe peoples, as it was simple to create and maintain.

Lamellar is pictured in many historical sources on **Byzantine** warriors, especially **heavy cavalry**. It is thought that it was worn to create a more deflective surface to the rider's armour, thus allowing blades to skim over, rather than strike and pierce. Recent studies by Timothy Dawson of the **University of New England, Australia**, suggest that Byzantine lamellar armour was significantly superior to mail armor.^[2]

Lamellar armour has been found in Egypt in a 17th-century BC context.^[3] **Sumerian** and **Ancient Egyptian** bas-reliefs depicting soldiers have been argued as portraying the earliest examples of lamellar armour, particularly on chariot drivers, but it is not until the time of the **Assyrians** (circa 900–600 BC) that possible examples of lamellar appear in the archaeological record. Among finds of Assyrian armour (often individual or unconnected scales), there are examples that can clearly be classified as **scale armor** as well as others that appear to be lamellar, and there exist a large number of finds whose function has proven difficult to determine.

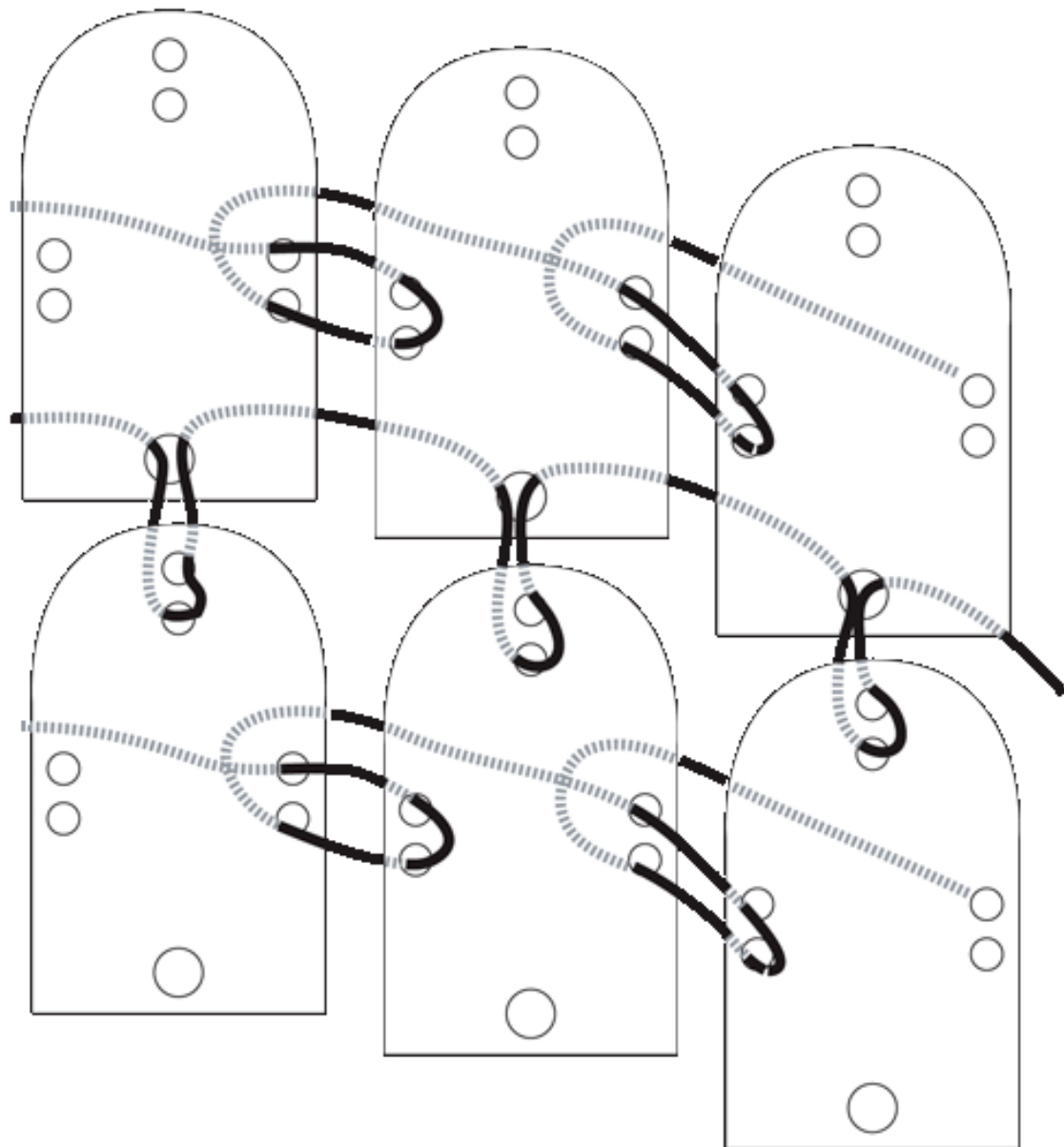
The extent to which either type was used is a debated topic. Lamellar was used by various cultures from this time up through the 16th century. Lamellar armour is generally associated with the armour worn by the **samurai** class of feudal Japan, although it came to Japan from Korea.^[4] Lamellar armour is also associated with **Mongolia**, **Eastern Russia**, the tribes of **Siberia** and the **Sarmatians**, evidence of lamellar armour has also been found in various European countries.^[4]



Japanese lamellar cuirass

82.3 Japanese lamellar armour

Lamellar armor reached Japan around the 5th century.^[4] The pre-samurai Japanese lamellar armour was called *keiko*. These early Japanese lamellar armours took the form of a sleeveless jacket and a helmet.^[5] The middle of the Heian period was when Japanese lamellar armor started to take the shape that would be associated with samurai armor. By the late Heian period Japanese lamellar armour developed into full-fledged samurai armour called *Ō-yoroi*.^[6]



One example of how lamellar armor is laced together

Japanese lamellar armours were made from hundreds or even thousands of individual leather (rawhide) and/or iron scales/lamellae known as *kozane*, that were lacquered and laced together into armour strips. This was a very time consuming process.^[7] The two most common types of scales which made up the Japanese lamellar armours were *hon kozane*, which were constructed from narrow or small scales/lamellae, and *hon iyozone*, which were constructed from wider scales/lamellae .

82.4 See also

- Chinese armour
- Korean armour
- Japanese armour
- Mongolian armour
- Russian Armour

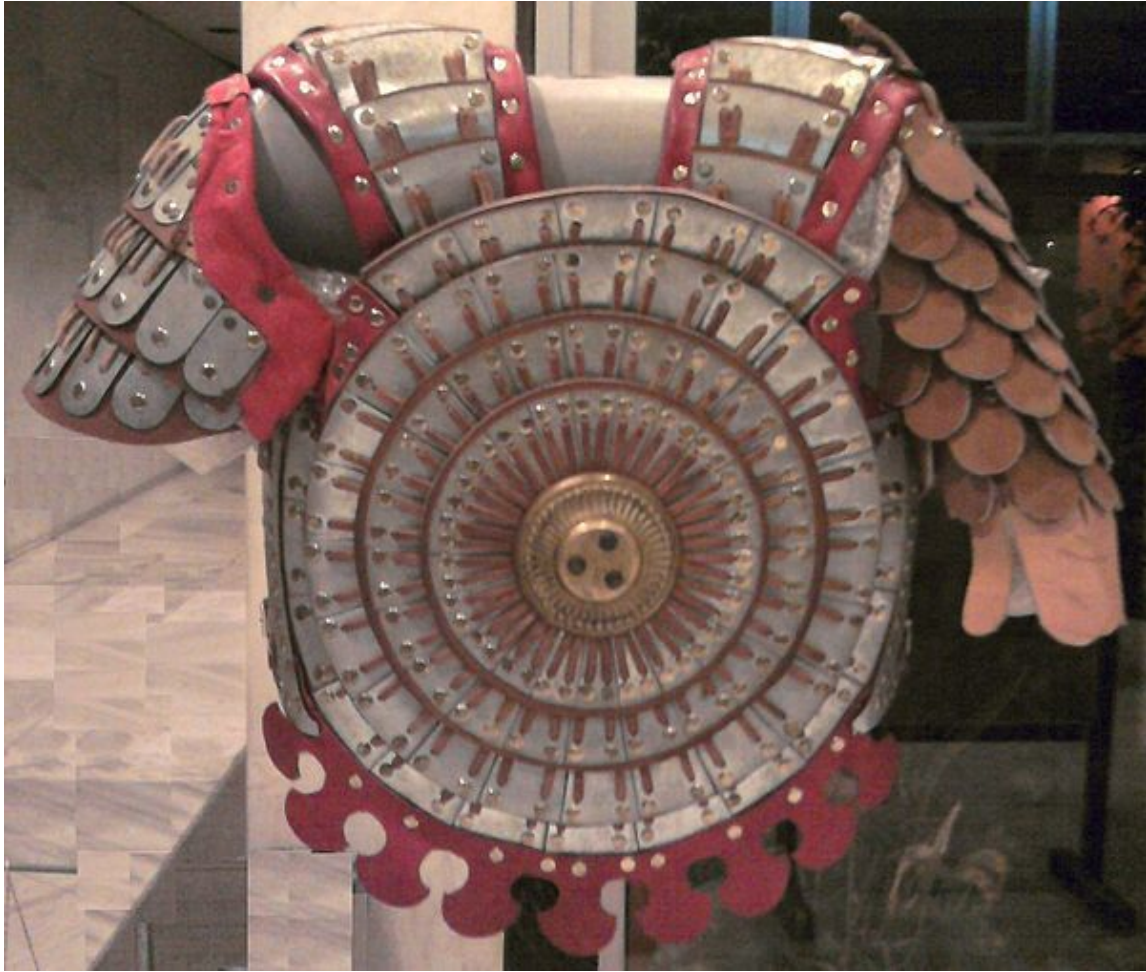


Lamellar armour worn by Koryak people

- Viking Armour
- Vietnamese armour
- Laminar armour
- Scale armour

82.5 References

- [1] *Oriental Armour*, H. Russell Robinson, Publisher Courier Dover Publications, 2002, ISBN 0-486-41818-9, ISBN 978-0-486-41818-6 P.6-7
- [2] www.levantia.com.au
- [3] Albert Dien: A Brief Survey of Defensive Armor Across Asia, *Journal of East Asian Archaeology*, 2, 3–4, 2000, p. 2



Byzantine klivanium (Κλιβάνιον) - a predecessor of ottoman krug mirror armour

[4] Robinson 2002, p. 10.

[5] Robinson 2002, pp. 169-170.

[6] Robinson 2002, p. 173.

[7] Friday, Karl F. (2004). *Samurai, Warfare and the State in Early Medieval Japan*. New York: Routledge. p. 94. ISBN 978-0-415-32963-7.

82.6 Sources

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Close up view of Japanese (samurai) hon kozane, lamellar armour constructed with small individual scales/lamellae known as kozane.

Chapter 83

Laminar armour

Laminar armour (from Latin: *lamina* - layer), sometimes referred to as "banded mail", is an armour made from horizontal overlapping rows or bands of solid armour plates,^[1] as opposed to **lamellar armour** which is made from individual armor scales laced together to form a solid-looking strip of armor. Prominent examples of such armour are **lorica segmentata**^[2] and certain versions of **samurai armour**. Less known examples were present in Asia from Iran to **Mongolia**, including Central Asia. In the 16th century laminar and lamellar armour was superseded by **plated mail** in the Middle East and Central Asia, remaining mainly in Mongolia. However, laminar armor did appear briefly in some form in Europe during the 16th to the 17th century with the main feature being the metal strips being fastened using sliding rivets. This was known as *anima* and was invented in Italy. Notable examples include the **Earl of Pembroke's Armour** and the armor worn by the **Polish hussars**. The technique was also used to armor the neck, upper limbs, and hips as seen in the **Almain rivet** and the **zischagge**.

83.1 Medieval laminar armour

83.1.1 Japanese laminar armour

Main article: **Japanese armour**

Pre-Samurai armour

Laminar cuirasses were manufactured in Japan as early as the 4th century.^[3] *Tankō* (laminar), worn by foot soldiers and *keikō* (lamellar), worn by horsemen were both pre-samurai types of early Japanese cuirass constructed from iron plates connected by leather thongs.

Samurai armour

At the beginning of the **Sengoku period** Japanese armour typically had two versions - expensive and inexpensive. The difference was that expensive versions were made from hundreds or even thousands of individual leather and or iron scales (*kozane*) laced together into armor strips (lamellar), this was a very time consuming process.^[4] The two most common types of scales (*kozane*) which made up the Japanese lamellar armors were **hon kozane** which were constructed from narrow or small scales, and **hon iyozone** which were constructed from wider scales.

Japanese *Laminar* armour was a less expensive and easier to construct type of armour which was made to look like simulated lamellar plates, it is known as *Kiritsuke iyozone*. *Kiritsuke iyozone* is a form of laminar armor constructed from long strips of leather and or iron which were perforated, laced, and notched and made to replicate the look of real lamellar plates. These strips of simulated lamellar plates were much more rigid than real lamellar and they were assembled into armor items in the same way that the rows of lamellar armour were.

After about a century of the ceaseless civil war during the **Sengoku period** simulated lamellar plates and true lamellar plates become less popular as plate armor started to be used more frequently. The laminar cuirass (*dou* or *dō*) evolved



Roman lorica segmentata worn with manica

to become the *okegawa dou* (dō), constructed of horizontal strips of armour joined not by laces, but by rivets or staples (imitating laces).

83.1.2 Middle East and Central Asian laminar armour

According to Bobrov, until the end of the 15th century the most popular armour in certain regions including *Central Asia* and *Iran* was *lamellar armour*, *brigandines*, and laminar armour. However in Iran since the 15th century lamellar and laminar armour were typical only in the south, while during the same 15th century the typical armour in the north was *plated mail*.

Initially (as in Japan) for centuries laminar armour was just a less expensive version of lamellar armour, but unlike Japan laminar it was not intended to visually imitate lamellar armour. Laminar was just made from horizontal strips of armour laced like strips of lamellar plates, but without extra-lacing and notches imitating strips of lamellar armour. And like in lamellar armour these laces could be occasionally cut during battle, the laces also frayed when an armour was worn long time without being mended.

Later at the beginning of the 15th century construction of laminar armour had significantly changed, instead of lacing being used, strips of new laminar armour were riveted to broad straps (like in *lorica segmentata*). As a result laminar armour became more reliable than lamellar armour - hidden straps couldn't be cut without the armour being penetrated, and the broad straps did not require continuous mending, and the straps were stiffer and more durable than the thinner lacing that was used previously. Laminar armour began eventually become more popular than lamellar armour, and almost fully replaced lamellar armour by the end of 15th century.

Pure lamellar armour became very rare, however different combinations of laminar and lamellar armour were very popular. This happened because even though laminar armour was much more reliable than lamellar, laminar armour was not flexible enough, while lamellar armours were very flexible. Laminar cuirasses could be worn with lamellar *pauldrons* and *tassets* (worn with separate *bracers*, *greaves* and *helm*). Less common was the opposite combination of lamellar cuirass worn with laminar *pauldrons* and *tassets*. Both could be optionally worn with lamellar or laminar *cod-piece* and *loin-guard*, or even with *mirror plate reinforcement*.

Ironically in the end of 15th century, when laminar armour became much more popular than lamellar ones, both armour types began to be replaced by *plated mails*. Initially plated mail was made only as *cuisse*s, but soon by the beginning of 16th century plated mail was utilized in both *pauldrons* and *cuisse*s, as they could better envelop body and fully replaced laminar and lamellar pauldron and *tassets*. So a typical laminar armour of that period was just a laminar cuirass which could be worn over brigandine with sleeves supplemented by plated mail *cuisse*s. (*Helm*, *bracers* and *greaves* are not mentioned here as they were conventional for that region). Sleeves of brigandine worked as pauldron, and if a brigandine was long enough its laps could work as *tassets*. Another option was wearing a laminar cuirass without any brigandine, but with plated mail pauldrons and *cuisse*s. Both variations of laminar armour could be re-enforced by *mirror plate* (even though laminar armour would have been enough protection from steel weapons, a metal mirror was worn as protection from the "evil eye"). Finally by the end of the 16th century laminar and lamellar armour practically disappeared in the *Middle East* and *Central Asia* regions.

Bobrov's theory

According to Bobrov's theory, *plated mail* fully replaced laminar and *lamellar armours* when, as a result of the Mongolian Invasion, the public perception of the *Islamic World* changed the perception of the armour it represented. The laminar and lamellar armours developed a "pagan" or "Mongolian" image, especially when fashioned in a Mongolian style, while mail and plated mail had developed a faithful image. In the Islamic miniatures of that period, it was typical for artists to depict their enemies (whether they were pagan or Muslim) in lamellar and laminar armours, while they depicted allied heroes in mails.^[5]

83.1.3 Mongolian laminar armour

Main article: *Mongolian armour*

83.2 Laminar armour of native peoples of Alaska and Siberia

Armour of Chukchi, Aleut, and Chugach (Alutiiq) had very similar construction,^[6] the difference was that Chukchi armour usually had only one enormous pauldron extending to the waist, used as a shield, and looking rather like a wing than (prominent for its big size) Japanese *o-sode* (shoulder armour), while Chugach armour typically had both “wings”. Both Chukchi and Chugach armour could have lamellar or laminar constructions unlike other regions were lamellar and laminar armour typically had different construction and were made from different materials.

Classic lamellar armour was made from hard materials (initially from natural materials like bone, tusk, baleen, and even wood as arrow-heads initially were from bone or stone) and in the shape of a short cuirass or even consisted only of a breast-plate. While laminar armour was made from hardened seal leather and often knee long, or even longer. However late lamellar armour made from metal (iron or steel or even brass) and could be as long as laminar armour. Both lamellar and laminar armour usually were worn with a high collar (protecting neck and head) integral with one or two laminar pauldrons (used rather as shield than ordinary pauldron). This collar and its pauldrons usually were made from leather and wood.

Usually at least one part of an armour (a pauldron) was laminar, but sometimes a pauldron was comparatively “short” and instead of being laminar constructed from a few wooden planks it instead used only one big plank, and the rest of the hand was protected by splinted or lamellar vambrace. Besides optional vambraces an armour could optionally have a lamellar helm, and splinted or lamellar greaves.

83.3 See also

- Lamellar armour
- Banded mail
- Plated mail
- Mirror armour
- Anima cuirass - a flexible segmented cuirass popular in Italy and Poland

83.4 References

- [1] *Sassanian Elite Cavalry AD 224-642*, Author Kaveh Farrokh, Publisher Osprey Publishing, 2005, ISBN 1841767131, 9781841767130 P.16
 - [2] *A concise dictionary of Greek and Roman antiquities*, Author Sir William Smith, Publisher Murray, 1898, Original from Indiana University, Digitized Mar 17, 2009 P.82-83
 - [3] *Sacred texts and buried treasures: issues in the historical archaeology of ancient Japan*, William Wayne Farris, University of Hawaii Press, 1998 P.75
 - [4] *Samurai, warfare and the state in early medieval Japan*, Karl F. Friday, Psychology Press, 2004 P.94
 - [5] Leonid A. Bobrov “Iron hawks from the territory of Maveranahr” (sets of the defensive equipment of the warriors of the Middle Asia and the neighbouring territories in 16th–17th centuries)
 - [6] “Tlingit, Eskimo and Aleut armors.” *Kunstamera*. Accessed 5 Feb 2014.
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 - Burch E. S., Jr. 1974. Eskimo Warfare in Northwest Alaska // *Anthropological Papers of the University of Alaska*. Vol. 16. Fairbanks. ¹ 2.
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 - Robinson H. R. 1967. *Oriental Armour*. (Arms and Armour Series). New York

83.5 External links

- Леонид Бобров "Защитное вооружение среднеазиатского воина эпохи позднего средневековья" (Leonid Bobrov "Panoply of a Late Medieval Central Asian Warrior")
illustrations: +
diagramms
- Silk Road Designs Armoury (Armour of Bands) (same site at the internet archive)



Japanese Kofun period armour . An iron helmet and cuirass with gilt bronze decoration, 5th century. Tokyo National Museum.



Japanese (samurai) Kiritsuke iyozone dou (dō) (laminar cuirass), constructed with horizontal rows (bands) of armor plates laced together in a manner that simulates the scales (kozane) of lamellar armor.



Okegawa dou (dō), constructed with horizontal rows (bands) of iron plates riveted together with no lacing being used at all, this type of armour was the beginning of plate armour development in Japanese armour.



Middle East and Central Asian laminar armour



Laminar armour from hardened leather with pauldrons enforced by wood worn by native siberians and Chugach (Alutiiq)

Chapter 84

Plated mail

For armour made entirely of plates, see [Plate armour](#).

“Splint mail” redirects here. For armors made from long metal strips, see [Splint armour](#).

Plated mail (**mail and plate armour**, **plated chainmail**, **splinted mail/chainmail**) is a type of mail with embedded plates. Armour of this type has been used in the [Middle East](#), [Japan](#), [China](#), [Korea](#), [Vietnam](#), [Central Asia](#), [Greater Iran](#), [India](#), [Eastern Europe](#), and by the [Moors](#).

84.1 Types of plated mail

In Russia there are three known varieties of this armour. These were adopted from [Persia](#), initially as Persian exports, and have Persian names.

- Behterets ([Russian](#): Бехтерец), from Persian *behter*:^[1] small horizontal plates arranged in vertical rows without gaps, joined by rings, and embedded in chainmail
- Yushman ([Russian](#): Юшман), from Persian *jawshan*:^[1] long horizontal plates embedded in chainmail and resembling [laminar armour](#) (e.g. Roman *lorica segmentata*)
- Kalantar ([Russian](#): Калантарь): square plates embedded in chainmail, very similar to the Japanese *karuta tatami-do*. The major difference is that *kalantar* are not sewn to a cloth backing as *Karuta tatami-do* are.

According to Bobrov^[2] the first plated mail appeared as [cuisses](#) in the [Middle East](#), and were imported by the [Golden Horde](#). Iranian miniatures of the first half of 15th century show different combinations of plated mail with [lamellar armor](#) and [brigandines](#) sometimes worn with a single [round mirror plate](#) as breast re-enforcement. The first representation of plated mail as body protection is shown in Iranian miniatures, which show plated mail composed of relatively large plates, worn with [laminar](#) pauldrons and skirt (formed from long, horizontal plates), re-enforced by a large [round mirror plate](#). The first representation of classic plated mail (without lamellar elements) can be seen in Baghdad’s miniature which dates from 1465. From the end of the 15th century plated mail began to fully replace [lamellar armours](#). The main difference between eastern European ([Russian](#) and [Polish](#)) and Oriental plated mail is that eastern European versions usually do not have sleeves, while Oriental versions have sleeves (the forearms were protected by [vambraces](#)). In a heavy version these sleeves have embedded plates, and a light version (more widely used) has sleeves entirely made from mail.

In *Kitab al-Durra al-Maknuna* (*The Book of the Hidden Pearl*) [Jābir ibn Hayyān](#) describes plated mail for use in armours (*jawasin*), helmets (*bid*), and shields (*daraq*).^[3]

In Japan plated mail is called “karuta”, small square or rectangular plates with the gaps between them filled with mail.^[4]

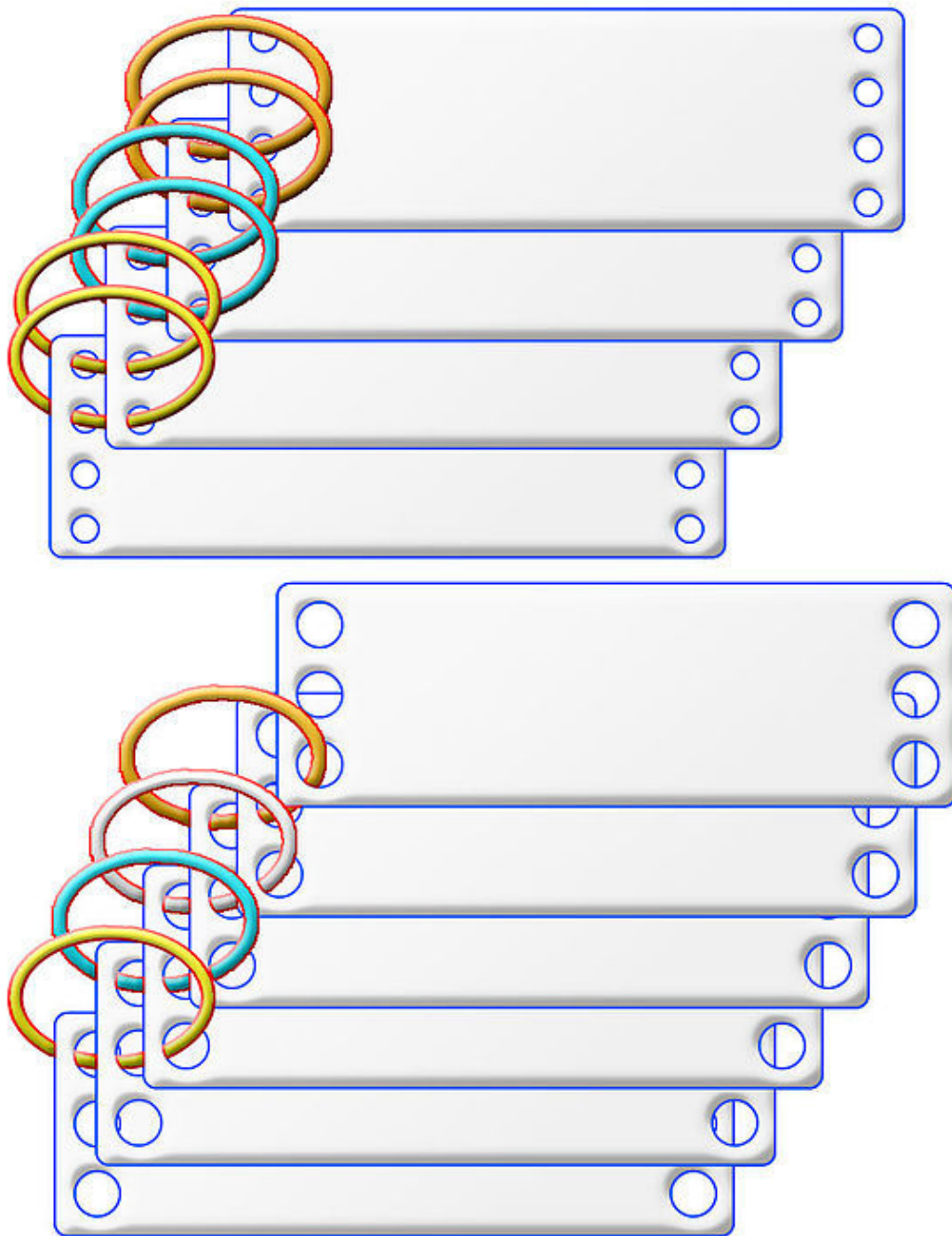
The Korean version of this armour is known as [gyeongbeongap](#) (경봉갑). The most famous general who used this type of armor was General Chonji.



Russian plated mail armour, Hermann Linn Museum, Narva, Estonia.

84.2 Gallery

- Japanese plated mail in the form of a karuta tatami-do
- Antique Mughal riveted mail and plate coat *zirah bagtar*. Armour of this type was introduced into India under the Mughals.
- Turkish plated mail from the Topkapi Palace.
- Indian Sindh plated mail
- Coat of mail with horn plates, Philippines (Moro people), 1800s - Higgins Armory Museum
- Iranian plated mail dating from 1450, the New York Metropolitan Museum of Art.



Polish: Bechter diagramm

- Ottoman Mamluk armour circa 1550
- Korean [조선시대](#) [갑옷](#)
- Kalantar Russian: Калантарь

84.3 See also

- kote - Japanese bracers which are often were made from plated mail sewn to cloth backing
- pl:Bechter poznański

- [pl:Bechter moskiewski](#) - Russian type of plated mail
- [Tatami-do](#) - Japanese type of plated mail
- [de:Baju Lamina](#) - Indonesian type of plated mail
- [de:Moro-Rüstung](#) - Philippine type of plated mail
- [Mail \(armour\)](#)
- [Splinted armour](#)
- [Lamellar armour](#)

84.4 References

- [1] Leonid A. Bobrov “Iron hawks from the territory of Maveranahr” (sets of the defensive equipment of the warriors of the Middle Asia and the neighbouring territories in 16th–17th centuries)
- [2] Леонид Бобров "Защитное вооружение среднеазиатского воина эпохи позднего средневековья" (Leonid Bobrov “Panoply of a Late Medieval Central Asian Warrior”) illustrations of different kind of plated mails
- [3] Ahmad Y Hassan, The Colouring of Gemstones, the Purifying and Making of Pearls, and Other Useful Recipes
- [4] Ian Bottomley & A. P. Hopson, *Arms and Armor of the Samurai: The History of Weaponry in Ancient Japan*, pp. 88 & 91.

84.5 External links

- [The Silk Road Designs Armoury \(Maile and Plates\)](#) (same site at the internet archive)
- [Russian medieval arms and armor](#)
- [about Korean plated mail](#) (lang. Korean)
 - [조선시대\(1392~1910\)의 갑옷](#)
 - [조선\(1392~1398\)의 갑옷](#)
- [Photos of Turkish plated mail](#)
- [Nihon Katchû Seisakuben](#)
 - [Tatami Dô](#)
 - [Kikkô](#) (Japanese brigandine from plates, mail and cloth)
- [Mughal Plated Mail \(Pakistan\)](#)
- [Samurai's Tatami-do](#)
- [Plated mail in turkish style owned by Holly Roman Emperor Charles V](#)

Chapter 85

Proofing (armour)

The **proofing** of armour is testing armour for its defensive ability, most commonly the historical testing of plate armour and mail (armour). In the early Middle Ages, armour would be classified by the blows it could withstand, being certified as proof against swords, axes, and arrows. As firearms emerged as battlefield weapons, armour would be tested against them, as well, from which came the modern term “bulletproof”. In Japan the testing of armor by arrow or a musket ball is called *tameshi* with the tested armor being called *tameshi gusoku*.^[1] Helmet and chest armors were tested and many examples of these armors showing the bullet test marks still exist.^{[2][3]} In the 1300s Japanese individual scale armor pieces were said to have been tested by arrows before being assembled into an armor.^[4]

85.1 References

- [1] *Arms and armor of the samurai: the history of weaponry in ancient Japan*, Authors Ian Bottomley, Anthony Hopson, Publisher Crescent Books, 1993, Original from the University of Virginia, Digitized Aug 26, 2008 ISBN 0-517-10318-4, ISBN 978-0-517-10318-0 P.140
 - [2] *Helmets and body armor in modern warfare*, Authors Bashford Dean, Metropolitan Museum of Art (New York, N.Y.), Publisher Yale University Press, 1920, Original from Harvard University, Digitized Dec 7, 2005 P.172
 - [3] *Oriental Armour*, Author H. Russell Robinson, Publisher Courier Dover Publications, 2002, ISBN 0-486-41818-9, ISBN 978-0-486-41818-6 P.227
 - [4] *Secrets of the Samurai: The Martial Arts of Feudal Japan*, Authors Oscar Ratti, Adele Westbrook, Publisher Tuttle Publishing, 1991, ISBN 0-8048-1684-0, ISBN 978-0-8048-1684-7 P.188
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- Ffoulkes, Charles (1988) [1912]. *The Armourer and his Craft* (Dover reprint ed.). Dover Publications. ISBN 0-486-25851-3.



Fig. 124. Japanese breastplate with marks of bullets, 1730 T

Antique Japanese chest armor dou with bullet marks from being tested for resistance to gun fire (tameshi).

Chapter 86

Ring armour

Ring armour (ring mail) is an assumed type of **personal armour** constructed as series of metallic rings sewn to a fabric or leather foundation. No actual examples of this type of armour have ever been found on European archaeological findings. It is sometimes called ringmail or ring mail. In the **Victorian era** the term “mail” was used fancifully for any form of metallic body armour. Modern historians reserve the term “**mail**” for armour formed of an interlinked mesh of metal rings.

The **Bayeux Tapestry** has been misinterpreted as depicting different types of armour. It is generally acknowledged today that virtually all the armour on the Bayeux Tapestry is standard mail armour and not “ring mail” or “trellised mail” or “masclad mail” or any other Victorian misinterpretation.^[1]

86.1 Theoretical construction

Ring armour was believed to be a leather or textile item of clothing (a jacket, or trousers) with a large number of metal rings sewn or tied directly into the foundation garment. Unlike mail armour, the rings are not physically interlocked with each other.

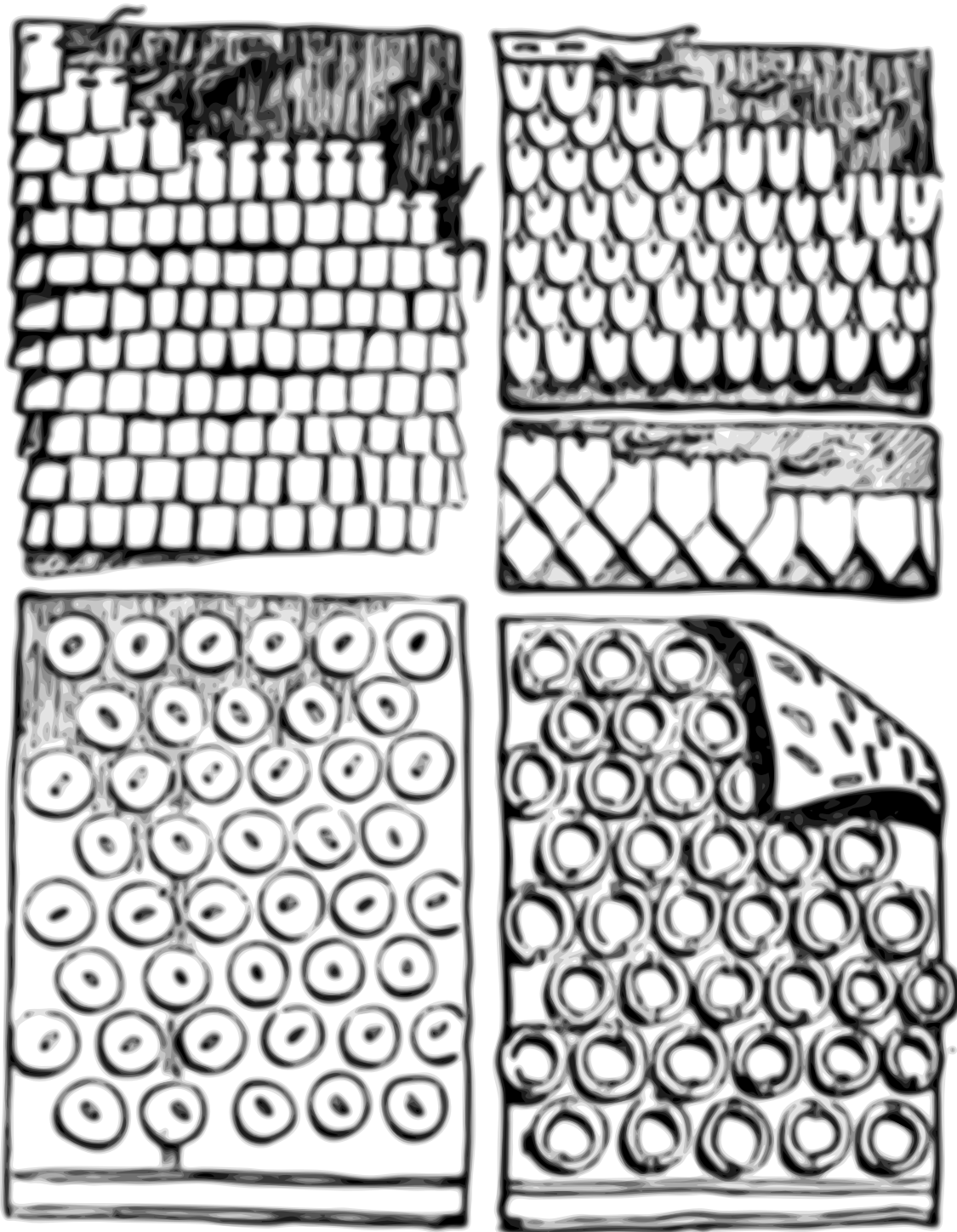
86.2 Schiessjoppe (eyelet doublet)

It has been claimed that the garment called **eyelet doublet** is not a form of ring armour, but an undergarment intended to be used under actual armour. The eyelets are intended as ventilation holes. It was known as a **Schiessjoppe** in Germany. However, Sir John Smythe, in 1591, recommended that, “Archers should weare either Ilet holed doublets that will resist the thrust of a sword ot a dagger and covered with some trim and gallant kinde of coloured cloth to the liking of the captain...or else Iackes of maile quilted upon fustian.”^{[2][3]} It is clear from this that Smythe’s “eyelet holed doublet” was not intended to be worn with mail but as a standalone armour, but this quote from the book titled “The Armourer and His Craft” By Charles John Ffoulkes brings into doubt whether the eyelet doublet was related to ring armour at all.^[3]

“From the nature of their composition these “eyelet doublets” are rarely to be met with. They were made of twine or thread knitted all over in eyelets or button-holes. The appearance is much the same as modern “tating” and macramé work.”

86.3 Ring armour in Asia

Ring armour seems to have been used in Asia but was rare (see External Image).



Examples of early armour construction. The lower right section is an example of ring armour.

86.4 External Images

86.5 References

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86.6 Notes

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Chapter 87

Scale armour

Scale armour is an early form of armour consisting of many individual small armour scales (plates) of various shapes attached to each other and to a backing of cloth or leather in overlapping rows.^[1] **Scale armour** was worn by warriors of many different cultures as well as their horses. The material used to make the scales varied and included **bronze**, **iron**, **rawhide**, **leather**, **cuir bouilli**, **seeds**, **horn**, **pangolin** scales and, in ancient China, **paper**. The variations are primarily the result of material availability.

87.1 Types of scale armours

Scale armour is armour in which the individual scales are sewn or laced to a backing by one or more edges and arranged in overlapping rows resembling the scales of a fish/reptile or roofing tiles.^[2] **Lorica squamata** is an ancient Roman armour of this type^[1] and **gyorin kozane** is the Japanese (samurai) name for this type of scale armour.^[3]

Other types of armours made from individual scales but constructed in a different manner have their own separate names such as **lamellar armour** where the individual scales are perforated on several or all edges and lashed tightly to each other in straight ridged rows and do not need to be attached to a backing. The Romans also had a variant called **lorica plumata** in which the scales were attached to mail.^[4]

87.2 Historical information

Horses covered with scale armour are mentioned in the ancient Chinese book of poetry *Shi Jing* which is several thousand years old.^[5] Scale armour is not of frequent occurrence on the grave monuments of the German frontier. On two tombstones of the Sertorii at Verona (one that of a centurion, the other that of a standard-bearer) both figures are represented wearing a tunic of scale armour which covers the shoulders and comes down below the belt. The Carnuntum monument of Calidius (a work of the middle of the first century) shows also a scaled tunic of a centurion. Again, in the collection of marble portrait-busts from the great Gallo-Roman villa of Chiragan near Toulouse, the Emperors Antoninus Pius and Severus both appear wearing corselets of scale armour.

87.2.1 Scythians

The **Scythians'** horse warriors appear to have used scale or possibly **lamellar armour**, evident both from contemporary illustrations and burial finds in the **Kurgans**. The armour was made from small plates of iron or bronze. Unique to the Scythians, about 20% of the females found in graves were dressed for war, some including armour, which may have inspired the Greek tales of **Amazons**.^[6]

Due to the semi-rigid nature of the armour, the Scythian variety was made as breast- and back-plates, with separate shoulder pieces. Some finds indicate partial armour, where a leather shirt or similar garment have sewn-on scales in places, particularly around the neck and upper chest.



Dacian scale armour on Trajan's column.

87.2.2 Roman scale armours

The individual scales used to construct Roman armour are called *squamae*^[7] or *squama*^[8] During Roman times scale armour (*lorica squamata*) was a popular alternative to mail (*lorica hamata*) as it offered better protection against bludgeoning. It was also widely used in Middle Eastern empires such as Persia and Byzantium. In these areas scales were commonly dished (that is with a bowl effect from a depression being hammered into a flat piece of metal) in order to benefit from the extra protection offered by a rounded scale.



Fragment of Lorica squamata. Each plate has six holes and the scales are linked in rows. Only the “lower most” holes are visible on most scales, while a few show the pair above and the ring fastener passing through them.

According to the statement of **Herodotus**, the ancient Persians wore tunics with sleeves of diverse colours, having upon them iron scales of the shape of fish-scales; and this comparison leaves no doubt that scale armour, and not mail, is meant.^[9]

87.2.3 Japanese scale armours

Japanese (samurai) individual scales are called *kozane*.^[10] Japanese scale armours constructed from fish type scales (*gyorin kozane*) were reportedly constructed in Japan as far back as the Fujiwara period (11th century). “A primitive type of Japanese harness, the single laminae being of boiled leather, cut and beaten into pieces shaped like fish-scales.”^[11]

87.3 Gallery of scale armours

- Scythian warrior in bronze scale armour
- Examples of early armour construction. The top two sections are examples of scale armour.
- Riveted-laced scale armour. Note: the tops are laced to backing, the centres are loosely riveted. (East-Europe, Kievan Rus and Byzantium)
- Japanese (samurai) fish style scale armour “gyorin kozane” from a helmet neck guard “kabuto shikoro” made from hardened leather (*nerigawa*).
- Korean armour made of tin scale (🔗🔗🔗), displayed at the Danghangpo Tourist Resort, site of the **Battle of Danghangpo**.
- Historical re-enactment of a *Sassanid* era cataphract.



Coat covered with the gold decorated scales of the pangolin. India, Rajasthan, early 19th century.

87.4 Comparison with other armour types

Scale armour offers better protection from blunt attacks than mail. It is also cheaper to produce, but it is not as flexible and does not offer the same amount of coverage. Forms other than brigandine and coat of plates were uncommon in medieval Europe, but scale and lamellar remained popular elsewhere.

Modern forms of scale armour are sometimes worn for decorative or LARP purposes, and may be made from mate-

rials such as steel, aluminium, or even titanium.

A similar type of modern personal armour is **Dragon Skin body armour**, which uses ballistic fabric and high-impact resistant ceramic plates to protect against pistol and rifle fire. However, its “scales” are not exposed.

87.5 See also

- **Lorica plumata** with scales attached to a backing of mail
- **Lamellar armour** which consists of scales laced together such as the **klibanion**
- A **brigandine** which consists of scales riveted between layers of leather or cloth.
- A **coat of plates** which consists of larger plates riveted between layers of leather or cloth.

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Chapter 88

Splint armour

This article is about armors made from long metal strips. For armors made from embedded metal strips, see [Splint mail](#).

Splint armour, also referred to as **splinted armour**. Splint armour first appears in a [Scythian](#) grave from the 4th century BCE.^[1]

88.1 Splint Armor

Limb armor consisting of strips of metal, or splints, which are attached to a fabric or [leather](#) backing or covering. The splints are narrow metal strips arranged longitudinally. The splints are pierced for riveting or sewing to a backing of straps, a foundation or a covering. Though no backing or covering survives, contemporary sources suggest they were made of either leather or sturdy fabric. The most common form of splint armour is for making [greaves](#) or [vambraces](#). It appears in the Swedish [Migration Era](#) era^[2] and again in the 14th century as part of [transitional armour](#). During the era of transitional armour splinted armour was used for the thighs ([cuisses](#)) and upper arms ([rerebrace](#)) as well.

88.1.1 Splint Mail/Splinted Mail

While there are limited examples of whole suits of armor from splints of wood/leather/bone, the common usage refers to the limb protections of [crusader knights](#), under the Victorian neologism “Splinted Mail”. Depictions typically show it on the limbs of a person wearing [mail](#), [scale armour](#), a coat of [plates](#) or other [plate harness](#).

In rare cases, knights in effigy are depicted as having leg protection depicted as a matrix of disks with a diameter equal to the splints. This method appears on [effigies](#) for [sabotons](#) and alternated with splints on greaves. It may represent padded armor underneath the splints, or the rivets on [brigandine](#).

88.2 Japan

Japanese samurai armor typically made use of splints for the lower legs and arms.

88.3 See also

- [Coat of plates](#)
- [Mirror Armor](#)
- [Scale armour](#)
- [Plated mail](#)

88.4 Notes

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An antique Japanese (samurai) kote (armored sleeve), showing splint armour on the forearm

Chapter 89

Statute forbidding Bearing of Armour

The **Statute forbidding Bearing of Armour** or **Coming Armed to Parliament Act 1313** (originally titled *Statuto sup' Arportam'to Armor* or *Statutum de Defensione portandi Arma*) was enacted in 1313 during the reign of **Edward II** of England. It decrees “that in all **Parliaments, Treatises and other Assemblies**, which should be made in the **Realm of England** for ever, that every Man shall come without all Force and Armour”. The statute, which was written in the **Anglo-Norman language**, goes on to assert the royal power to “defend Force of Armour, and all other Force against our Peace, at all Times when it shall please Us, and to punish them which shall do contrary.” It declares that “Prelates, Earls, Barons, and the Commonalty of our Realm... are bound to aid Us as their Sovereign Lord at all Seasons, when need shall be.”^[1]

The statute was issued following a period of political turmoil in England which had culminated in the declaration of the **Ordinances of 1311** – a set of regulations imposed on the king by the English peerage and clergy to restrict his power. The role of the king's favourite, the relatively low-born **Piers Gaveston**, was a particular source of tension between Edward and his nobles. The barons forced Edward to send Gaveston into exile in a parliament held in April 1308, which they may have attended under arms.^[2]

When Gaveston returned from his exile in **Ireland** in 1309, he further infuriated the kingdom's most senior nobles by treating them with contempt, giving them crude nicknames such as “Burstbelly” and “**Whoreson**”. They refused to attend parliaments called for October 1309 and February 1310, citing Gaveston's presence as the reason. Edward sought to placate them on the latter occasion by sending Gaveston out of London and ordering the earls to come unarmed to parliament. Instead, they raised armed retinues which camped on the outskirts of London and presented themselves fully armed before the king, in open defiance of his edict. The outcome of the parliament was the creation of a council of nobles which eventually produced the Ordinances a year later.^[3] The Earls of Lancaster, Warwick and Hereford also attended the parliament of September 1312 fully armed.^[2]

Edward's enactment of the 1313 statute represented at least his fifth attempt to rein in his nobles' tendency to use the threat of armed force as a means of bringing pressure at parliament. Similar prohibitions were also issued in October 1308, February 1310, October 1311 and August 1312. However, the statute does not seem to have resolved the problem at the time. The **Earl of Lancaster** defied the statute by attending the parliaments of February 1316, October 1318 and May 1319 under arms, and in June 1318 was accused by the king's council of attending parliaments “*a force e armes*”.^[2]

The law is still in force today, though the **Crown Prosecution Service** has said that it is unaware of anyone being prosecuted under this or other archaic statutes in recent times.^[4] According to a CPS spokeswoman, “If anyone was caught in the Houses of Parliament wearing armour it would first be a matter for the police.”^[4]

89.1 References

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A suit of armour; not allowed in Parliament

Chapter 90

Transitional armour

Transitional armour describes the armour used in Europe around the 14th century, as body armour moved from simple mail hauberks to full plate.

The **couter** was added to the **hauberk** to better protect the elbows, and **splinted armour** and the **coat of plates** provided increased protection for other areas.

Armourers in general began experimenting with various forms of rigid defense. They worked in a variety of materials, including wrought iron, latten, leather, cloth and even bone to substitute rigid materials for maille as the knight's harness progressed. Toward the end of the century and into the following one, updates to armour took place at an accelerated rate.

The use of multiple materials is the key stylistic element of the period. For instance, a set of transitional style arm defenses could employ steel **pauldrons**, leather **rerebraces**, steel **elbow cops** and leather **vambraces**. These items would be strapped with leather and might have brass or bronze fittings and buckles. This use of varied materials gave the armour different coloring, textures and more elegant appearance.

Swordfighting re-enactors such as the **Society for Creative Anachronisms** wear personalized transitional armour for safety reasons, composed of a combination of thick leather, mail and plate armour.



Transitional Cuirass

Chapter 91

Vervelles

Vervelles are small metal **staples** used in Medieval armour to attach an **aventail** to a **helmet**. A leather cord would be woven through the top row of rings and the vervelles, securing the two together.

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Chapter 92

Viking Age arms and armour



Battle scene from the Bayeux Tapestry

Knowledge about arms and armour of the **Viking Age** (end of 8th- to mid-11th-century Europe) is based on relatively sparse archaeological finds, pictorial representation, and to some extent on the accounts in the **Norse sagas** and Norse laws recorded in the 13th century.

According to custom, all free Norse men were required to own weapons, as well as permitted to carry them at all times. Indeed, the *Hávamál*, purported to be sage advice given by **Odin**, states “Don't leave your weapons lying about behind your back in a field; you never know when you may need all of sudden your spear.”^[1]

These **arms** were also indicative of a Viking's social status. As war was the most prestigious activity in Viking Age Scandinavia, beautifully finished weapons were an important way for a warrior to display his wealth and status.^[2] A wealthy Viking would likely have a complete ensemble of a **spear**, one or two **javelins**, a wooden **shield**, and either a **battle axe** or a **sword**. The very richest might have a helmet, other armour is thought to have been limited to the nobility and their professional warriors. The average farmer was likely limited to a spear, shield, and perhaps a common **axe** or a large knife. Some would bring their hunting bows to use in the opening stages of battle, as well.^[3]

92.1 Weapons

92.1.1 Bows and arrows

The **bow and arrow** was used both for hunting and in battle. They were made from **yew**, **ash** or **elm trees**. The draw force of a 10th-century bow may have reached some 90 pounds force (400 N) or more, resulting in an effective range of at least 200 m depending on the weight of the arrow. A yew bow found at Viking **Hedeby**, which probably was a full-fledged war bow, had a draw force of well over 100 pounds. Replica bows using the original dimensions have been measured to between 100 and 130 pounds draw weight. A unit of length used in the Viking age called a bow shot corresponded to what was later measured as 227.5 m, or 800 feet. Illustrations from the time show bows being pulled back to the chest, rather than to the corner of the mouth or under the chin, as is common today.

Arrowheads were typically made from iron and produced in various shapes and dimensions, according to place of origin. Most arrowheads were fixed onto the arrow shaft by a shouldered tang that was fitted into the end of a shaft of wood. Some heads were also made of wood, bone or antler. Evidence for eagle feather flights has been found with the feathers being bound and glued on. The end of the shaft was flared with shallow self nocks, although some arrows possessed bronze cast nocks. The historical record also indicates that Vikings may have used barbed arrows, but the archaeological evidence for such technology is limited.

The earliest find of these relics were found in Denmark, seemingly belonging to the leading-warrior class, as per the graves in which they were found.

92.1.2 Spear

The **spear** was the most common weapon of the peasant class of Scandinavia and also throwing spears may have been used by the warrior class. They consisted of metal heads with a blade and a hollow shaft, mounted on wooden shafts of two to three metres in length, and were typically made from ash wood. The spear heads could measure between twenty and sixty centimetres with a tendency towards longer heads in the later Viking age.^[2] Spear heads with wings are called *króksþjót* (hooked spear) in the sagas. Some larger-headed spears were called *höggþjót* (hewing spear) and could also be used for cutting. The barbed throwing spears were often less decorated than the ostentatious thrusting spears, as the throwing spears were often lost in battle.^[4]

The spear was used both as a throwing weapon and as a thrusting weapon, although there was some specialization in design. Lighter, narrower spearheads were made for throwing; heavier broader ones, for stabbing.^[2] Most evidence indicates that they were used in one hand. Limited evidence from a saga indicates that they may have been used with two hands, but not in battle. The head was held in place with a pin, which saga characters occasionally pull out to prevent a foe from re-using the weapon.

Compared to a sword, the spear can be made with inferior steel and far less metal overall. This made the weapon cheaper and probably within the capability of a common blacksmith to produce. Despite this, the spear held great cultural significance to the Viking warrior, as the primary weapon of **Odin**, the king of the Norse gods and the god of warfare, was the spear *Gungnir*.^[5] The *Eyrbyggja saga* alludes that a customary start to a battle included throwing a spear right over the enemy army to claim it for Odin.^{[6][7]} Possibly due to its cultural significance, **pattern-welded** blades are common in spear heads, and the sockets were often decorated with silver inlaid patterns.^[2]

92.1.3 Other polearms

Main articles: **Atgeir** and **Viking halberd**

A polearm known as the *atgeir* is mentioned in several sagas of **Icelanders** and other literature. *Atgeir* is usually translated as “halberd”, akin to a **glaive**. **Gunnar Hámundarson** is described in *Njáls saga* as cutting and impaling foes on his *atgeir*.

Several weapons (including the *kesja* and the *höggþjót*) appearing in the sagas are **Viking halberds**. No weapon matching their descriptions have been found in graves. These weapons may have been rare, or may not have been part of the funerary customs of the Vikings.



Replica spear and shield pre-Viking (c. 530-680) characterisation and dress by Weorod historical reenactment group

92.1.4 Knife

See also: Seax

Two distinct classes of knives were in use by Vikings. The more common one was a rather plain, single edge knife of normal construction, called a *knifr*. These are found in most graves, being the only weapon allowed for all, even slaves. Smaller versions served as the everyday utility tool, while longer versions were likely meant for hunting or combat or both. Weapon knives sometimes had ornamental inlays on the blade.^[8] The construction was similar to



Viking knife, based on the finds exhibited at Jorvik Viking Centre

traditional Scandinavian knives. The **tang** ran through a more or less **cylindrical** handle, the blade was straight with the edge sweeping upward at the tip to meet the back of the blade in a point.^[8] The knife apparently played an important role for all Scandinavians. This is evidenced by the large number of knives found in burial sites of not only men, but also of women and children.^[9]



Broken-back seax from Sittingbourne in Kent

The other type was the **seax**. The type associated with Vikings is the so-called broken-back style seax. It was usually a bit heavier than the regular knife and would serve as a **machete**- or **falchion**-like arm. A wealthier man might own a larger seax, some being effectively swords. With the single edge and heavy blade, this somewhat crude weapon would be relatively simple to use and produce, compared to the regular sword. A rather long tang is fitted to many examples, indicating they may have had a longer handle for two-handed use. The smaller knife-like seaxes were likely within the fabrication ability of a common blacksmith.

The **Seax** was in widespread use among the Migration period Germanic tribes, and is even eponymous of the **Saxons**. It appears in Scandinavia from the 4th century, and shows a pattern of distribution from the lower **Elbe** (the **Irminones**) to **Anglo-Saxon England**. While their popularity on the continent declines with the end of the Migration period, though they remained in the British Isles where it was taken up by the Vikings. The large, sword-like seaxes are primarily found in connection with Viking settlements in England and Ireland, but appear not very common in Scandinavia.^[3]

92.1.5 Sword

Main article: [Viking sword](#)

The **Viking Age sword** was for single-handed use to be combined with a shield, with a double edged blade length of up to 90 cm. Its shape was still very much based on the swords of the **Dark Ages** and on the **Roman spatha** with a tight grip, long deep fuller and no pronounced cross-guard. It was not exclusive to the Vikings, but rather was used throughout Europe^[10]

Swords were very costly to make, and a sign of high status. Like Roman **spathae** they were worn in leather-bound wooden scabbards suspended from a strap across the right shoulder. Early blades were pattern-welded, a technique in which strips of wrought iron and mild steel were twisted and forged together, with the addition of a hardened edge. Later blades of homogeneous steel, imported probably from the Rhineland, many bearing inlaid makers' marks and inscriptions, such as **INGELRII** or **ULFBERHT**. Local craftsmen often added their own elaborately decorated hilts, and many swords were given names, such as Leg-biter and Gold-hilt.^[11] The sword grip was usually made of an organic material such as wood, horn, or antler (which does not often survive for archeological uncovering) and may well have been wound around with textile.^[12]

Owning a **sword** was a matter of high honour. Persons of status might own ornately decorated swords with silver accents and inlays. Most Viking warriors would own a sword as one raid was usually enough to afford a good blade. Most freemen would own a sword with **goðar**, **jarls** and sometimes richer freemen owning much more ornately decorated swords. The poor farmers would use an axe or spear instead but after a couple of raids they would then

have enough to buy a sword. One sword mentioned in the *Laxdæla saga* was valued at half a crown, which would correspond to the value of 16 milk-cows. Constructing such weapons was a highly specialized endeavour and many sword-blades were imported from foreign lands such as the *Rhineland*. Swords could take up to a month to forge and were of such high value that they were passed on from generation to generation. Often, the older the sword, the more valuable it became.^[13]

A distinct class of early single edged swords is known from Eastern Norway at the time. These had the same grips as the double edged swords, and blades of comparable length. The blades varied from long and slim, like the more common two edged swords, to somewhat heavy, giving the weapon a more cleaver-like balance.^[14] Confusingly the same finds are sometimes classified as “sabres” or “seaxes” in English literature.^[15]

As mentioned above, a sword was so valued in Norse society that good blades were prized by successive generations of warriors. There is even some evidence from Viking burials for the deliberate and possibly ritual “killing” of swords, which involved the blade being bent so that it was unusable. Because Vikings were often buried with their weapons, the “killing” of swords may have served two functions. A ritualistic function in retiring a weapon with a warrior, and a practical function in deterring any grave robbers from disturbing the burial in order to get one of these costly weapons.^{[7][12]} Indeed, archeological finds of the bent and brittle pieces of metal sword remains testify to the regular burial of Vikings with weapons, as well as the habitual “killing” of swords.^[16]

- Viking Swords and axes
- Viking swords displayed at the *Wikingermuseum* in *Hedeby*.
- A Danish axe on the Bayeux tapestry.
- Two axes found in Western Norway on display in Bergen
- Modern reproduction of a Dane axe

92.1.6 Axe

Main article: *Dane Axe*

Perhaps the most common hand weapon among Vikings was the ax. Swords were more expensive to make, and mostly wealthy warriors could afford a sword. The prevalence of axes in archaeological sites can likely be attributed to its role as not just a weapon, but also a common tool. This is supported by the large number of grave sites of female Scandinavians containing axes.^[17] Several types of larger axes specialized for use in battle evolved, with larger heads and longer shafts. The larger forms were as long as a man and made to be used with both hands, called the *Dane Axe*. Some axe heads were inlaid with silver designs. In the later Viking era, there were axe heads with crescent shaped edges measuring up to 45 centimetres (18 in) called *breiðöx* “broad axe”. The double-bitted axes depicted in modern “Viking” art are likely pure fantasy.

Vikings most commonly carried sturdy axes that could be thrown or swung with head-splitting force.^[18] The *Mammen Axe* is a famous example of such battle-axes, ideally suited for throwing and melee combat.^[19]

An axe head was mostly *wrought iron*, with a steel cutting edge. This made the weapon less expensive than a sword, and was a standard item produced by blacksmiths, historically.

Like most other Scandinavian weaponry, axes were often given names. According to Snorri Sturluson’s *Prose Edda*, axes were often named after she-trolls.^[20]

92.2 Shields

92.2.1 Round shields

The shield was the most common means of defence. The sagas specifically mention *linden* wood for shield construction, although finds from graves shows mostly other timbers, such as *fir*, *alder* and *poplar*. These timbers are not very dense and are light in the hand. They are also not inclined to split, unlike oak. Also, the fibres of the timber bind around blades preventing the blade from cutting any deeper unless a lot more pressure is applied. In conjunction with stronger wood, Vikings often reinforced their shields with leather or, occasionally, iron around the rim.^[2] Round



The shield wall

shields seem to have varied in size from around 45 – 120 cm (18” - 48”) in diameter but 75 – 90 cm (30” - 36”) is by far the most common.

The smaller shield sizes came from the pagan period for the Saxons and the larger sizes from the 10th and 11th centuries. Most shields are shown in illuminations as being painted a single colour although some have a design painted onto them; the commonest designs are simple crosses or derivations of sun wheels or segments. The few round shields that survived have much more complicated designs painted on them and sometimes very ornate silver and gold work applied around the boss and the strap anchors.^[21]

The **Gokstad ship** has places for shields to be hung on its railing and the Gokstad shields have holes along the rim for fastening some sort of non-metallic rim protection. These were called shield lists and they protected ship crews from waves and the wind. Some Viking shields may have been decorated by simple patterns although some skaldic poems praising shields might indicate more elaborate decoration and archaeological evidence has supported this. In fact, there is a complete subgenre of Skaldic poetry dedicated to shields, known as “shield poems,” that describe scenes painted on shields.^[7] For example, the late-9th-century skaldic poem, *Ragnarsdrápa*, describes some shields painted with mythological scenes. Viking shields were also heavily used in formations. The **shield wall** or *skjaldborg* was a main formation in which accomplished Viking warriors would create a line of interlocked shields and thrust spears at adversaries. Other notable tactics included the **svinfylking** “boarsnout”, in which warriors would create a wedge configuration and attempt to burst through the front line of nearby foes.^[22]

92.2.2 Kite shields

By the end of the Viking age the **kite shield** appeared on the continent. This shield is shown used by cavalry on the **Bayeux Tapestry**, and may have evolved as a shield for mounted fighting. However, these shields were not ideally suited to Viking-style infantry combat tactics, given its poor protection of an infantryman’s legs.^[2] No remains of kite shields are known from Scandinavia from the Viking period. It is debatable whether or not these bosses were used in the same fashion as round shields; i.e. gripped at the centre. The tendency in re-enactment is to wear them crossbraced, as if you were still riding. This is because if the shield is held near the boss, the lower section acts like a pendulum making it difficult to operate.

There is evidence for both flat and curved kite shields, with the curved being more common, and most having bosses. The Kite shield seems to vary between 1.0 and 1.5m (3'6” – 5') in length with about 1.2m (4') being the most common. Contemporary depictions like the Bayeux tapestry show them with various designs, including geometric patterns.

- Viking shield
- A typical Viking shield in Gokstad style
- Shield mountings on the ship

92.3 Armour

92.3.1 Helmet



Helmet from chieftain's grave, 10th-century Norway

Today there is only one known example of a complete Viking helmet in existence.^[23] It was excavated on a farm called Gjermundbu in **Ringerike** in central Norway. Gjermundbu is located in **Haugsbu**, a village in northeast of **Hønefoss**, in **Buskerud**, Norway. The helmet dates to the 10th century. This helmet was made of iron and was in the shape of a rounded or peaked cap made from four plates after the **spangenhelm** pattern. This helmet has a rounded cap and has a “spectacle” guard around the eyes and nose which formed a sort of mask, in addition to a possible mail **aventail**. The eye guard in particular suggests a close affinity with the earlier, **Vendel Period** helmets. From **runestones** and other illustrations, it is known that the Vikings also wore simpler helmets, often caps with a simple noseguard.^[24]

Viking helmets have been excavated from only three sites: Gjermundbu in Norway, **Tjele Municipality** in Denmark

and Lokrume parish on **Gotland, Sweden**. The one from Tjele consists of nothing more than rusted remains of a helmet similar to the Gjermundbu helmet, the same goes for the one from Gotland. It is possible that many of the Viking helmets were made from hardened leather and iron strips, since many Icelandic stories and Scandinavian picture stones tell and show warriors with helmets. It is also possible that helmets were inherited, instead of buried with the deceased owner, and went from father to son, and therefore stayed in a family for generations before eventually being turned into scrap metal or something else, like an axe. The Bayeux tapestry and its depiction of the Norman conquest of England in 1066 also depicts people scavenging armor and weapons from the dead. It is therefore likely that the chieftain or king that went into war, supplied his **housecarls** and warriors with war gear (unless already being a land owning free man that could supply his own war gear), and when they died, their war gear was retrieved.

There is no evidence that Vikings used horned helmets in battle, although it is possible that horned head dresses were used in ritual contexts.^[25] The horned and winged helmets associated with the Vikings in popular mythology were the invention of 19th-century Romanticism.^[7]

92.3.2 Mail

Once again, only a single fragmented but possibly complete **mail** shirt has been excavated in Scandinavia, from the same site as the helmet – Gjermundbu in Haugsbygd. Scandinavian Viking age burial customs seems to not favour burial with helmet or mail armour, in contrast to earlier extensive armour burials in Sweden **Valsgärde**. Probably worn over thick clothing, a mail shirt protects the wearer from being cut, but offers little protection from blunt trauma. The difficulty of obtaining mail armour resided in the fact that it required thousands of interlinked iron rings, each one of which had to be individually riveted together by hand.^[2] As a result, mail was very expensive in early medieval Europe, and would likely have been worn by men of status and wealth.^{[26][27]}

The mail worn by Vikings was almost certainly the “four-on-one” type, where four solid (punched or riveted) rings are connected by a single riveted ring. Mail of this type is known as a *byrnie* from Old Norse *brynja*. Expensive mail armour was also seen as cumbersome and uncomfortable in battle. Traditionally, Vikings have been thought to have opted for leather body armour—or none at all—as it was both more flexible and cheaper. However, there is no archeological evidence to support leather armour.^[19] Given that Vikings on a raid tried to avoid pitched battles, it's possible that mail was primarily worn only by the professional warriors going into battle, such as the Great Danish Army(also known as the Great Heathen Army) of the mid-9th century in England or Harald Hardrada's invasion of Northumbria in 1066.

92.3.3 Lamellar

More than thirty lamellae (individual plates for **lamellar armour**) were found in Birka, Sweden, in 1877, 1934 and 1998-2000.^[28] They were dated to the same approximate period as the Gjermundbu mailshirt (900-950) and may be evidence that some Vikings wore this armour, which is a series of small iron plates laced together or sewed to a stout fabric or leather cats shirt. There is considerable debate however as to whether the lamellae in question were in the possession of a Scandinavian resident or a foreign mercenary.

92.3.4 Cloth and leather

Quilted cloth (a **gambeson**) is conjectured as possible options for lower-status Viking warriors, though no reference to such are known from the sagas. Such materials survive poorly in graves, and no archaeological finds have been made. Some **rune stones** depict what appears to be armour which is likely not **mail**. The armour in question may have been the lamellar armour mentioned above, or may not have been armour at all. Several layers of stout **linen** or **hemp** canvas would provide a good level of protection, at reasonable expense, as would winter clothing made from thick **woolen** cloth.^[3] Practical experience with maille also suggests an undergarment of some sort would have been worn between the maille and the regular tunic, to protect the latter from dirt and excessive wear, but the descriptions of the effect of axes in the Sagas indicate such garments were lightly padded if at all.

Leather was far pricier during the period than today, and thus less affordable for the casual warrior. In *St. Olav's* saga, the king's bane **Thorir Hund** is said to have worn a tunic made from **reindeer** fur, enchanted by “Finns” (Sami), defending him from sword blows. The tunic is described as “magically” enhanced which may indicate that it may not represent a typical example of such a garment. Leather clothing does, however, occasionally turn up in archaeological finds, and would have offered some degree of protection in combat.



Thorir Hund dressed in a reindeer hide tunic kills king Olaf at the Battle of Stiklestad

All in all, the case for non-metal forms of armour remains inconclusive. It is likely that the average Viking fought whilst wearing ordinary clothing, with the shield as the only form of protection.^[3]

92.4 Foreign origins of Viking arms and armour

Foreign-made weapons and armour played a special role in Norse society. Norsemen attained them either through trade (an extension of gift-giving in Norse society) or as plunder. Therefore, their possession and display by any individual would signify their station in the social hierarchy and any political allegiances they had.^{[29][30]} One example of an exchange of weapons between the Franks and the Vikings occurred in 795 when **Charlemagne** exchanged weapons with the Anglo-Saxon king **Offa of Mercia**.^[9]

Scandinavian affinity towards foreign arms and armour during the Viking Age had an eminently practical aspect. Norse weapon designs were obsolete and sources of iron within Scandinavia were of poor quality. Frankish swords like the **Ulfberht** had a higher carbon content (making them more durable) and their design was much more maneuverable compared to Scandinavian-produced swords.^[9] Although smaller weapons like daggers, knives, and arrowheads could be manufactured in Scandinavia, the best swords and spearheads were undoubtedly imported.^{[9][17]}

Many of the most important Viking weapons were highly ornate—decorated lavishly with gold and silver. Weapons adorned as such served large religious and social functions. These precious metals were not produced in Scandinavia and they too would have been imported.^{[17][31]} Once in Scandinavia, the precious metals would have been inlaid in the pommels and blades of weapons creating geometric patterns, depictions of animals, and (later) Christian symbols.^[17]

Vikings also used foreign armour. According to *Heimskringla*, one hundred Vikings appeared “in coats of ring-mail, and in foreign helmets” at the **Battle of Nesjar**^[32] in 1016.

During the mid-9th century there was an influx of these high-quality weapons into Scandinavia, and Frankish arms became the standard for all Vikings.^[26] As **Ahmad ibn Fadlan** observed in his account of his journey to Russia, every Viking carried a “sword of the Frankish type”.^[33] The Franks attempted to limit the Vikings’ use of weapons and armour produced in **Francia** - fearing that they would eventually face equally armed opponents.^[9] Chapter 10 of the *Capitulare Bononiense* of 811 made it illegal for any clerical functionary to supply swords or armour to non-Frankish individuals.^[34] Laws like this were enacted throughout **Francia**. Ultimately, in 864, King **Charles the Bald** of West **Francia** made the practice punishable by death.^[9]



Viking swords

Some scholars have proposed that such laws proved so effective at stemming the flow of Frankish weapons that they initiated the practice of raiding for which Vikings became notorious.^[9]

92.5 Saga accounts

92.5.1 Battles

- Battle of Hafrsfjord
- Battle of Hastings
- Battle of Hjörungavágr
- Battle of Svolder
- Battle of Nesjar
- Battle of Stiklestad

92.5.2 Duels

- *Kormáks saga*, holmgang of Kormák and Bersi

92.6 See also

- Anglo-Saxon warfare
- Bayeux Tapestry
- Gothic and Vandal warfare
- Norman invasions
- Runestones
- Shieldmaidens
- Viking raid warfare and tactics

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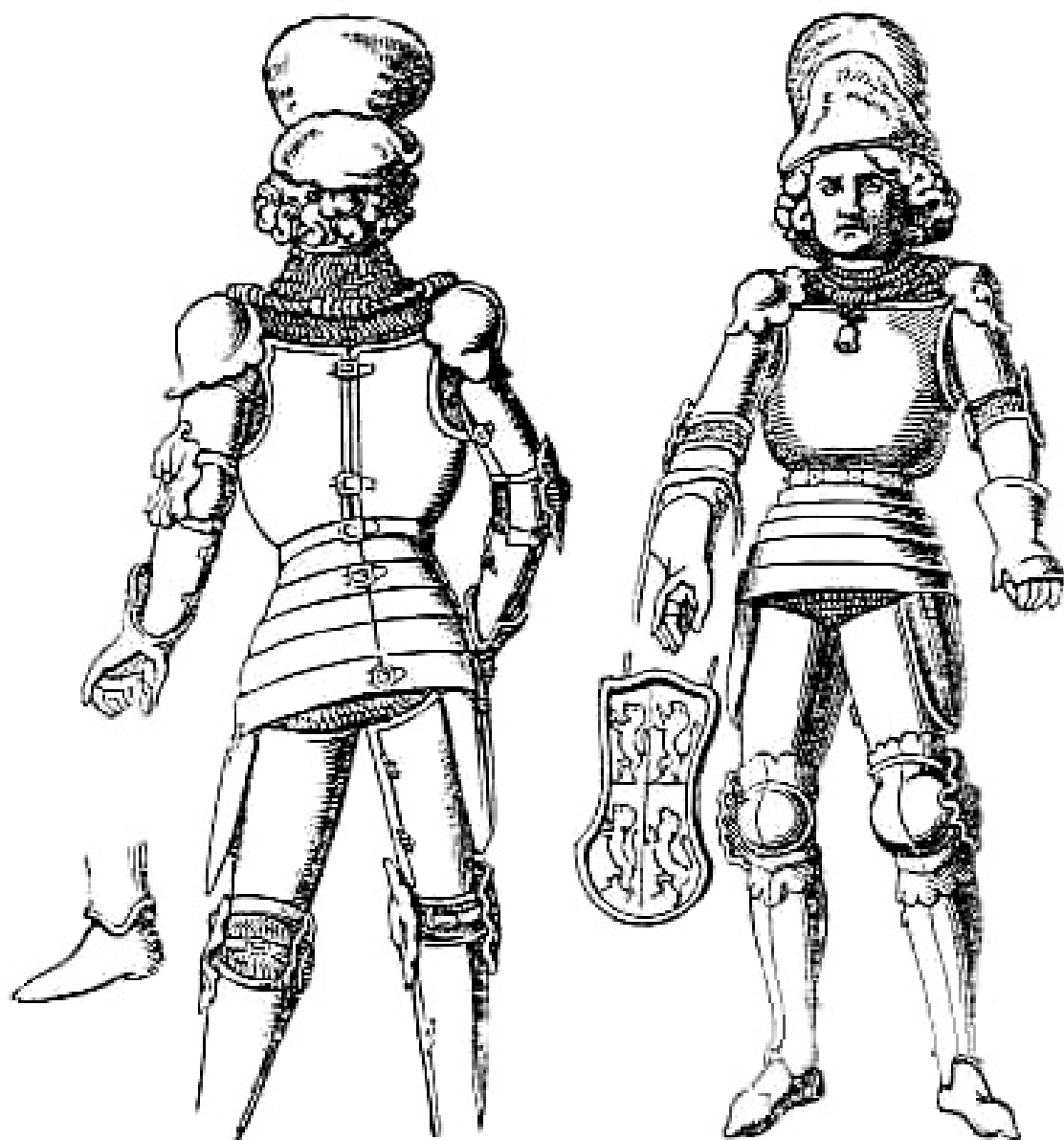
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- Arms and Combat in the Íslendingasögur
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- The 'Viking Shield' from Archaeology by Peter Beatson
- Viking Helmet from Gjermundbu, Norway
- Metropolitan Museum of Art

Chapter 93

White armour



An early type of alwyte armour; note that it opens from the back like a brigandine, so it could be considered as a late type of transitional armour

White armour, or *alwyte armour*, was a form of **plate armour** worn in the **Late Middle Ages** characterized by full-body steel plate without a **surcoat**. Around 1420 the surcoat, or “coat of arms” as it was known in **England**, began to disappear, in favour of uncovered plate. Areas not covered by plate were protected by **mail** sewn to the **gambeson** underneath.

During the fifteenth century national styles of armour emerged. White armour was a term used synonymously with **Italian** design, which was innovative in expanding the use of plate armour to cover joints that had been **previously protected by mail**. The descriptive term *white armour* referred both to the absence of a surcoat and the absence of decorative trimmings: the rival **German** style was fluted, both for aesthetic reasons and for structural advantage in resisting crushing blows.

These two approaches to armouring remained recognizable throughout the fifteenth century. Eventually each borrowed the other’s innovations. By the early sixteenth century the distinction became obsolete.

Black and white armour is a different term, for late 16th and 17th century armour that uses a contrast between highly burnished “white” and unpolished “black” areas for decorative effect in large bold patterns over the armour.

93.1 See also

Predecessors

- **Brigandine**
- **Transitional armour**

Successors

- **Milanese armour**
- **Kasten-brust armour**

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- **Hauberk** *Source:* <http://en.wikipedia.org/wiki/Hauberk?oldid=624708223> *Contributors:* Wapcaplet, Glenn, Oberiko, Treanna, Eyrian, Alansohn, Ghirlandajo, Korg, Conscious, Witan, David Woodward, Gaius Cornelius, Robrecht, Complainer, Stephen e nelson, Ergbert, Mkill, Caerwine, SMcCandlish, SmackBot, Jagged 85, Srneq, Gilliam, Durova, Thumperward, Yaf, B.ellis, MegaA, Mathiasrex, Neddyseagoon, JoeBot, Gil Gamesh, Cydebot, PerfectStorm, Mercutio.Wilder, AntiVandalBot, Raphael Nore, Pygmalion-DE, PAK Man, Cpapadelis, TXiKiBoT, Corvus coronoides, Uifareth Cuthalion, SieBot, ImageRemovalBot, ClueBot, The Thing That Should Not Be, Dylan620, Addbot, Jojhutton, Captain-tucker, Luckas-bot, Yobot, Dorieo, Rubinbot, DDH89, Craig Pemberton, Tarendarian, RedBot, Samuraiaintiqueworld, Supertomi, ClueBot NG, JoeCovenant, Helpful Pixie Bot, Jedi5150, Nathancourt, Krakkos, Darkness walks, TorpetLegionary and Anonymous: 50
- **Cuirass** *Source:* <http://en.wikipedia.org/wiki/Cuirass?oldid=649995585> *Contributors:* Eric119, Angela, Jebdogdaddy, Ghoppe, Wetman, Xyzyyva, Micru, Per Honor et Gloria, Eyrian, Dbachmann, Mandramas, CanisRufus, Pjrich, Kross, RuM, Olessi, Margosbot, Brandmeister (old), Jeffthejiff, RussBot, Snek01, Haoie, PhilipC, Ergbert, Wai Hong, SmackBot, AskJoanne, Durova, Nativebornal, Bluebot, Thumperward, Moshe Constantine Hassan Al-Silverburg, Smart Fox, Esrever, John, Jpogi, Mgiganteus1, BillFlis, Cydebot, Pepi-jnvG, Aldis90, Mercutio.Wilder, Gdo01, Yellowdesk, Leevclarke, JAnDbot, Deflective, Cynwolfe, Magioladitis, GearedBull, Quoth the Raven, Milece, Belissarius, Dorvaq, CommonsDelinker, Johnbod, Idioma-bot, VolkovBot, Uifareth Cuthalion, SieBot, Jauerback, Gliese581, Karasakii, ClueBot, Fyyer, Abu America, RafaAzevedo, DragonBot, Charles.O.Wilson, Mhoenicka, Addbot, Favonian, Peter Napkin Dance Party, Lightbot, Zorrobot, Luckas-bot, Lavallen, Materialsscientist, LilHelpa, Erud, Srich32977, Omnipaedista, RibotBOT, Vgeraskin, I dream of horses, Aeholmer, Samuraiaintiqueworld, UltimaRatio, Philafrenzy, ChuispastonBot, ClueBot NG, GiffTor, EnglishTea4me, Primergrey, Snaevan-bot, Blaue Max, CameronCoe, XjiGsayouthx, Sh hilo, Juicebox22, Bob11129, Hajamon, Denysdd, Silenthummer, SoFlawCrew, Asdr2, Gjpaterson2013, Sir Pootis, Jwfvml and Anonymous: 44
- **Plackart** *Source:* <http://en.wikipedia.org/wiki/Plackart?oldid=565778990> *Contributors:* William Avery, Hohum, Woohookitty, Deathlibrarian, Urselius, Johnbod, Addbot, FranksterTurtle, Mintrick, Vgeraskin and Anonymous: 4
- **Faulds (armour)** *Source:* [http://en.wikipedia.org/wiki/Faulds%20\(armour\)?oldid=565781199](http://en.wikipedia.org/wiki/Faulds%20(armour)?oldid=565781199) *Contributors:* Lucky 6.9, Eyrian, Pearle, Hohum, RJFJR, Snek01, Ergbert, Crystallina, Dangherous, Durova, Amalas, Cydebot, Hdt83, Johnbod, Sonictails1189, Stormreavever, Atmammatma, Nashville strigoi, DragonBot, *TPC* Clan, Addbot, Tequilatrinity, Sikovin, Al3xil, Mark Schierbecker, Some standardized rigour and Anonymous: 2
- **Culet (armour)** *Source:* [http://en.wikipedia.org/wiki/Culet%20\(armour\)?oldid=565779516](http://en.wikipedia.org/wiki/Culet%20(armour)?oldid=565779516) *Contributors:* Jerzy, Bearcat, Eyrian, Crystallina, Locutus Borg, CmdrObot, Amalas, Waerloeg, Johnbod, MatthewVanitas, Addbot, Sikovin and Xufanc
- **Couter** *Source:* <http://en.wikipedia.org/wiki/Couter?oldid=602666647> *Contributors:* Rfl, Eyrian, CDN99, Allen3, Crystallina, SmackBot, Durova, Only, Nehrams2020, Amalas, Cydebot, Wandalstouring, Heroeswithmetaphors, JimCubb, Magioladitis, Johnbod, TXiKiBoT, Nashville strigoi, DumZiBoT, Addbot, Sikovin, HerculeBot, Xqbot, Vincenzo80, Couterbane, B1naryatrOphy, Tentinator, Shaunmozmccg and Anonymous: 15
- **Spaulders** *Source:* <http://en.wikipedia.org/wiki/Spaulders?oldid=655447593> *Contributors:* DocWatson42, Eyrian, Dcfleck, Rrreese, SunWuKong, Gaius Cornelius, Crystallina, SmackBot, Durova, Thumperward, John, Amalas, Cydebot, Caejis, Magioladitis, HoosTrax, J.delanoy, Johnbod, SieBot, Nashville strigoi, DumZiBoT, Addbot, Sikovin, DSisypheBot, LucienBOT, Ripchip Bot, Calanon, Samuraiaintiqueworld, BattyBot, WordSeventeen, BilboB360 and Anonymous: 13
- **Pauldron** *Source:* <http://en.wikipedia.org/wiki/Pauldron?oldid=631151579> *Contributors:* Samw, Furrykef, Jerzy, EricBS, Pjedicke, DocWatson42, Eyrian, Dbachmann, BRW, Weyes, Rufous, Alvin-cs, BlueJaeger, Sandstein, Crystallina, Durova, Berensflame, TheKaplan, Iridescent, Amalas, Airport 1975, Cydebot, Centrepull, PhoenixBlitzkrieg, Johnbod, VolkovBot, Nashville strigoi, Addbot, Luckasbot, AnomieBOT, EmausBot, Racex11, B1naryatrOphy, Vert33 and Anonymous: 11
- **Rerebrace** *Source:* <http://en.wikipedia.org/wiki/Rerebrace?oldid=629309180> *Contributors:* Eyrian, Hohum, Quuxplusone, TDogg310, Crystallina, SmackBot, Hmains, Cydebot, Urselius, PhoenixBlitzkrieg, Johnbod, Nashville strigoi, DumZiBoT, Addbot, Sikovin, Luckasbot, Citation bot, Jamesgmh and Anonymous: 1
- **Besagew** *Source:* <http://en.wikipedia.org/wiki/Besagew?oldid=565779165> *Contributors:* Eyrian, Gaius Cornelius, Cydebot, Johnbod, Nashville strigoi, Emceelane, Addbot, Sikovin, The real Marcoman, FrescoBot and Anonymous: 3
- **Vambrace** *Source:* <http://en.wikipedia.org/wiki/Vambrace?oldid=629309331> *Contributors:* Rmhermen, Stevertigo, ChrisO, Benc, Pengryphon, Joyous!, Poccil, Eyrian, Dbachmann, Kross, Hohum, Kusma, Woohookitty, David Woodward, JDSpeeder1, Crystallina, SmackBot, Durova, Calliopejen, Snori, Bardsandwarriors, Amalas, N2e, Cydebot, Wandalstouring, Mercutio.Wilder, AntiVandalBot, R'n'B, Johnbod, Theblindsage, Nashville strigoi, Alexbot, DumZiBoT, Addbot, Sikovin, Legobot, Luckas-bot, Dorieo, OdeJ, Vincenzo80, Le kasydzu, Enoate, FiveColourMap, B1naryatrOphy and Anonymous: 14
- **Gauntlet (glove)** *Source:* [http://en.wikipedia.org/wiki/Gauntlet%20\(glove\)?oldid=638431249](http://en.wikipedia.org/wiki/Gauntlet%20(glove)?oldid=638431249) *Contributors:* Furrykef, Samsara, Varlaam, Quadell, Quill, Eyrian, Discospinster, Rama, Mandramas, Kwamikagami, Art LaPella, Caeruleancentaur, Hooperbloob, AndreasPraefcke, TaintedMustard, Earpol, Benbest, GregorB, BD2412, Quiddity, TheRingess, Yamamoto Ichiro, Latka, GLaDOS, Robrecht, TTMSHU, Sandstein, Cnguyen, Kintetsubuffalo, Durova, Chris the speller, Snori, Moshe Constantine Hassan Al-Silverburg, Stevage, Sb617, Benami, DrexelGregory, Peteforsyth, Pats1, Geh, Onionmon, OnBeyondZerbrax, FairuseBot, Special Penguin, 5-HT8, Cydebot, Lupine Proletariat, Daniel 123, Energyfreezer, After Midnight, Calvero JP, JamesAM, Mglivesfun, ChrisLamb, Deflective, Johnbod, LordAnubisBOT, Berserkerz Crit, Arundel77, Billinghamurst, Lamro, AlleborgoBot, Ahead, VAWebteam, ClueBot, Bockj, SchreiberBike, WendellR, ZooFari, Thebestofall007, Addbot, Jmackerdr, LaaknorBot, AndersBot, Luckas-bot, Yobot, Idot, Popezilla, Lotje, Miracle Pen, 777sms, Hirsutism, Samuraiaintiqueworld, Lobsterthermidor, ClueBot NG, Pluma, Blessonbeats, GoShow, Chris troutman and Anonymous: 65

- **Chausses** *Source:* <http://en.wikipedia.org/wiki/Chausses?oldid=599213893> *Contributors:* Csernica, Charles Matthews, Dimadick, MisfitToys, Mzajac, Eyrian, Kwamikagami, TaintedMustard, Vegaswikian, Hairy Dude, David Woodward, Aeusoes1, Jacklee, Tremor27, Durova, Cydebot, Agne27, Deflective, KarBOT, Johnbod, Idioma-bot, Master z0b, Addbot, Sikovin, Voodoopoodle and Anonymous: 3
- **Poleyn** *Source:* <http://en.wikipedia.org/wiki/Poleyn?oldid=599214612> *Contributors:* Charles Matthews, Eyrian, LtNOWIS, Axeman89, Vegaswikian, Dddstone, Crystallina, Durova, Amalas, Cydebot, Idioma-bot, Una Smith, Nashville strigoi, Alexbot, Addbot, Sikovin, Team4Technologies, Materials scientist, ClueBot NG, Khazar2 and Anonymous: 6
- **Schynbalds** *Source:* <http://en.wikipedia.org/wiki/Schynbalds?oldid=646673550> *Contributors:* Csernica, DMG413, Eyrian, Vegaswikian, Kirill Lokshin, Crystallina, SmackBot, Durova, Cydebot, Waerloeg, Sikovin, Erik9bot, Dawneyestone and Anonymous: 3
- **Greave** *Source:* <http://en.wikipedia.org/wiki/Greave?oldid=640097373> *Contributors:* Jonik, Topbanana, GreatWhiteNortherner, Oberiko, Jastrow, Eyrian, Gimferrer, Dbachmann, MatthiasKabel, Hohum, BillC, CristianChirita, Hiberniantears, LeCire, Palladinus, Deucalionite, Gadget850, Codrinb, Closedmouth, Crystallina, Durova, Moshe Constantine Hassan Al-Silverburg, Mark4011, Snowmanradio, Yahussain, Bjankuloski06en, Neddysagoon, Amalas, Cydebot, Thijs!bot, Mentifisto, JAnDbot, Cynwolfe, Bibi Saint-Pol, WLU, Medium69, Johnbod, Ontarioboy, Idioma-bot, Screamer4life, A4bot, Una Smith, Canology, AlleborgoBot, Logan, SieBot, Nashville strigoi, Fillosaurus, SchreiberBike, Catalographer, Calidius, Addbot, Sikovin, HHGGGG!, Luckas-bot, Yobot, J04n, Urgos, Elockid, RjwilmsiBot, Beyond My Ken, Samuraiantiqueworld, ZéroBot, ChuispastonBot, ClueBot NG, Widr, Mark Arsten, Mogism, Makecat-bot, HIST406-13sdehart, Myers18111, Monkbot and Anonymous: 27
- **Cuisses** *Source:* <http://en.wikipedia.org/wiki/Cuisses?oldid=565778124> *Contributors:* Eyrian, KharBevNor, Crystallina, Midway, Durova, Trekphiler, Amalas, Cydebot, Wandalstouring, Richardf., Johnbod, Master z0b, ClueBot, Nashville strigoi, Addbot, Sikovin, KorinoChikara, Luckas-bot, Yobot, Samuraiantiqueworld and Anonymous: 8
- **Sabaton** *Source:* <http://en.wikipedia.org/wiki/Sabaton?oldid=605363684> *Contributors:* Bryan Derksen, Cimon Avaro, Steinsky, Lucky 6.9, Eyrian, Midness, BRW, Dominic, Feezo, Tabletop, Meneth, DVdm, Crystallina, SmackBot, Durova, Colonies Chris, Xyzzyplugh, Alpykk, Amalas, Cydebot, JAnDbot, Johnbod, Eldaran, WikiBotas, Nashville strigoi, XLinkBot, Addbot, Sikovin, Mephiston999, Lightbot, Yobot, Idot, Amirobot, ArthurBot, The real Marcoman, LucienBOT, Vincenzo80, Vrenator, APTEM, Berkh, Neil P. Quinn, Bright Darkness, Drmoofix, Tahc, 93 and Anonymous: 15
- **Tassets** *Source:* <http://en.wikipedia.org/wiki/Tassets?oldid=565778271> *Contributors:* Eyrian, Dbachmann, Elman, Sandstein, Ash Crow, Crystallina, SmackBot, Amalas, Cydebot, Johnbod, Nashville strigoi, Jtle515, Addbot, Sikovin, Luckas-bot, Dorieo, Baueda wargames, Samuraiantiqueworld, ClueBot NG, Olivechamp and Anonymous: 4
- **Gousset** *Source:* <http://en.wikipedia.org/wiki/Gousset?oldid=437952018> *Contributors:* Leonard G., TaintedMustard, Kirill Lokshin, Crystallina, SmackBot, Durova, Cydebot, Waerloeg, Sikovin, The real Marcoman, Erik9bot and Anonymous: 3
- **Lame (armor)** *Source:* [http://en.wikipedia.org/wiki/Lame%20\(armor\)?oldid=593461653](http://en.wikipedia.org/wiki/Lame%20(armor)?oldid=593461653) *Contributors:* Jerzy, Bearcat, Eyrian, Tabletop, Malcolm, Crystallina, SmackBot, Hmains, Dwpaul, Amalas, Johnbod, Wilhelm meis, Nashville strigoi, Sikovin, Some standardized rigour, EmausBot, Samuraiantiqueworld, Jejcombe and Anonymous: 2
- **Doublet (clothing)** *Source:* [http://en.wikipedia.org/wiki/Doublet%20\(clothing\)?oldid=649014407](http://en.wikipedia.org/wiki/Doublet%20(clothing)?oldid=649014407) *Contributors:* Kevinbasil, David Latapie, Dimadick, SchmuckyTheCat, Adinas, CanisRufus, Indil, Acjelen, Computerjoe, BD2412, Loggie, Srleffler, PKM, Bjwebb, RussBot, Witan, Pigman, Igiffin, Jacklee, Churchh, SmackBot, Snori, Bardsandwarriors, TheEditrix, Nqa, Thijs!bot, Lmbhull, Pygmalion-DE, CommonsDelinker, NewEnglandYankee, Hammersoft, Philip Trueman, VAWebteam, MagicBear, Niceguyedc, WooteleF, Alansplodge, Addbot, Proxima Centauri, Lightbot, Fried-peach, Valerio79, AnomieBOT, Materials scientist, Bob Burkhardt, J04n, FrescoBot, Pinethicket, Beyond My Ken, EmausBot, PanteraRosa, Erianna, Audrey2011, MerllwBot, Osama57, Tahc and Anonymous: 20
- **Rondel (armour)** *Source:* [http://en.wikipedia.org/wiki/Rondel%20\(armour\)?oldid=644002090](http://en.wikipedia.org/wiki/Rondel%20(armour)?oldid=644002090) *Contributors:* Eyrian, D.brodale, Gaius Cornelius, SmackBot, Deathlibrarian, Halbared, Johnbod, Truthanado, Nashville strigoi, Addbot, Sikovin, Yobot, Idot, Xqbot, Some standardized rigour, Dinamik-bot and Anonymous: 6
- **Enclosed helmet** *Source:* <http://en.wikipedia.org/wiki/Enclosed%20helmet?oldid=646085298> *Contributors:* Skysmith, DocWatson42, DragonflySixtyseven, SmackBot, Deathlibrarian, WhiteCrane, RebelRobot, Magioladitis, Twigler, Urselius, Reedy Bot, Kudpung, Johnbod, Wilhelm meis, Andy Dingley, Blanchardb, Idot, Originalylem, The real Marcoman, FrescoBot, Felis domestica, Khazar2 and Anonymous: 8
- **Frog-mouth helm** *Source:* <http://en.wikipedia.org/wiki/Frog-mouth%20helm?oldid=647231162> *Contributors:* Bearcat, DocWatson42, Malcolm, Johnbod, Wilhelm meis, Dawn Bard, ImageRemovalBot, Dangling Conversation, Londonclanger, Citation bot, Quebec99, The real Marcoman, ArticlesForCreationBot, You Can Act Like A Man, Wywin, VampireFreak09 and Anonymous: 6
- **Hounskull** *Source:* <http://en.wikipedia.org/wiki/Hounskull?oldid=655138154> *Contributors:* Raymond, Larry Dunn, Bullenwächter, Johnbod, Wilhelm meis, Hamiltondaniel, Baronofcheese, Wireframe-model, Lightbot, Yobot, Dorieo, LilHelpa, The real Marcoman, Jlanor, Historicus09, Helpful Pixie Bot, Macesito, Ghost Lourde and Anonymous: 2
- **Lobster-tailed pot helmet** *Source:* <http://en.wikipedia.org/wiki/Lobster-tailed%20pot%20helmet?oldid=651344514> *Contributors:* William Avery, Nv8200p, Kpalion, Mrrhum, Rich Farmbrough, Dbachmann, BD2412, Kirill Lokshin, Crystallina, Aelfthrytha, Durova, Bluebot, Osbus, Neddysagoon, Amalas, Hmaag, Struthious Bandersnatch, Urselius, CommonsDelinker, Johnbod, V8Cougar, GlassCobra, Nick19thind, Addbot, Yobot, Rubinbot, Piggyninthemiddle, Vincenzo80, Anolis18, ClueBot NG, Morgan Riley, Helpful Pixie Bot, Osama57, YiFeiBot and Anonymous: 7
- **Coif** *Source:* <http://en.wikipedia.org/wiki/Coif?oldid=563404304> *Contributors:* Morven, RedWolf, OrangUtanUK, Eyrian, Discospinner, Kwamikagami, Andrew Gray, Benson85, TaintedMustard, Alai, SchuminWeb, PKM, Toddler3, Gaius Cornelius, Igiffin, Churchh, SmackBot, Aelfthrytha, Bluebot, Thumperward, Snori, SilkTork, Richard75, Tawkerbot2, TheEditrix, AlaiBot, CoramVobis, Noclevername, Deflective, Albany NY, TheEditrix2, Cactusdave, Anietor, IceDragon64, Leafyplant, SieBot, Techman224, OKBot, KarenLarsdatter, Place Clichy, Ara6012, Felix Folio Secundus, Addbot, Lightbot, OIEnglish, Zorrobot, Bermicourt, Luckas-bot, Rubinbot, Xqbot, DSisyphBot, FrescoBot, BenzolBot, Daniel the Monk, Jdcollins13, MPSchneiderLC, HueSatLum, ChrisGualtieri and Anonymous: 18
- **Morion (helmet)** *Source:* [http://en.wikipedia.org/wiki/Morion%20\(helmet\)?oldid=639312694](http://en.wikipedia.org/wiki/Morion%20(helmet)?oldid=639312694) *Contributors:* Varlaam, Eyrian, Dbachmann, TaintedMustard, Scriberius, RussBot, Witan, Appleseed, SmackBot, Nativeborncl, Snori, Locutus Borg, Boreas74, Woodshed, AlbertSM, Fordmadoxfraud, Languagehat, BetacommandBot, JamesAM, Oreo Priest, JAnDbot, Diego Azeta, R'n'B, CommonsDelinker, Johnbod, AntiSpamBot, Wilhelm meis, Hugo999, Bitbut, SieBot, CultureDrone, WikiBotas, Elsweyn, Nick19thind, Alexbot, Addbot, Zorrobot, Luckas-bot, Yobot, Rogerb67, ArthurBot, Wintewater, Urgos, Vincenzo80, EmperorOwen993, Jandalhandler, Obsidian Soul, K6ka, ZéroBot, A930913, ClueBot NG, Helpful Pixie Bot, Osama57, FLNGcherryholmes, Khazar2, Animus93, Dnlor 01 and Anonymous: 24

- **Nasal helmet** *Source:* <http://en.wikipedia.org/wiki/Nasal%20helmet?oldid=635009915> *Contributors:* Eyrian, Witan, Kirill Lokshin, Sandstein, Herostratus, Srnc, Moshe Constantine Hassan Al-Silverburg, CmdrObot, Alaibot, Brendandh, Magioladitis, Blackthorn9, Kiminatheguardian, Urselius, Andy Dingley, Nashville strigoi, Addbot, Sikovin, Rubinbot, Obersachsebot, The real Marcoman, Janotn, BodvarBjarki, Jauhienij, Macesito and Anonymous: 6
- **Spangenhelm** *Source:* <http://en.wikipedia.org/wiki/Spangenhelm?oldid=655842840> *Contributors:* Wetman, MisfitToys, Eyrian, Stbalbach, Bender235, Circeus, Larry Dunn, Angr, Richard Arthur Norton (1958-), Amir85, FlaBot, Bgwhite, RussBot, Kirill Lokshin, Adaxl, Crystallina, Durova, Geneb1955, Elendil's Heir, Jfreyre, Michael Bednarek, Billyfishzwei, Amandajm, Aldis90, Altaileopard, Jack Bethune, Gun Powder Ma, Urselius, The Show-Ender, Wilhelm meis, Idioma-bot, VolkovBot, Gamer112, Tmaull, Piratedan, Nashville strigoi, Addbot, Sikovin, LaaknorBot, Zorrobot, Luckas-bot, Jdstekley, GrouchoBot, The real Marcoman, Völkerwanderer and Anonymous: 13
- **Kettle hat** *Source:* <http://en.wikipedia.org/wiki/Kettle%20hat?oldid=621556880> *Contributors:* Jtdirl, David Latapie, Robbot, Alexf, Dylac, Anthony Appleyard, Fat pig73, RainbowOfLight, Angr, Before My Ken, GraemeLeggett, SchuminWeb, Kirill Lokshin, Dialectric, Brian Crawford, Lockesdonkey, Crystallina, SmackBot, Emoscopes, Mike McGregor (Can), Durova, Thumperward, Jfreyre, Amalas, Gogo Dodo, Jack Bethune, Feyenatic london, Urselius, RockMFR, Bobthefishguy, TheKing1066, Wilhelm meis, Master z0b, VolkovBot, JustinHagstrom, Maxim, JoshuaGrainger, BURNyA, Bilsonius, Addbot, Ginosbot, Idot, Erik9bot, Urgos, OgreBot, Jauhienij, ZéroBot, Freemadi, GuyHimGuy, Helpful Pixie Bot and Anonymous: 18
- **Visor (armor)** *Source:* [http://en.wikipedia.org/wiki/Visor%20\(armor\)?oldid=565777453](http://en.wikipedia.org/wiki/Visor%20(armor)?oldid=565777453) *Contributors:* Fransvannes, Infrogmation, Jtdirl, Secretlondon, Chris 73, Fabiform, Elf, Eyrian, Anthony Appleyard, Angr, Scriberius, SchuminWeb, Kirill Lokshin, Crystallina, SmackBot, Durova, AlbertSM, Johnbod, SieBot, Nashville strigoi, Addbot, Sikovin, LatitudeBot, Luckas-bot, Idot, Obersachsebot, The real Marcoman, Erik9bot and Anonymous: 9
- **Falling buffe** *Source:* <http://en.wikipedia.org/wiki/Falling%20buffe?oldid=565779102> *Contributors:* Jerzy, Giraffedata, Grutness, Hohum, Johnbod, Jormantis, Idot and Anonymous: 2
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